MINIMALISM

1. Construct 11 different measures of music. Use repetitive, additive, and drone techniques.
2. Use the **Lucas** mathematical series to structure the form as you combine your composed measures.
3. Score your composition. Include specific instructions for performance.
4. If you like, "modulate" from tonality to atonality or vice versa.

GRADING:

Eleven measure with additive, repetitive, and drone techniques	30
Use of Lucas series as many ways as possible especially to organize form	20
Correct scoring	15
Editing, performance instructions	15
Focal point	10
Practical for performance by the class (bring 8 copies)	10

Chapter 13

Minimalism and Microtonality

Minimalism

During the 1960's, young Americans looked at the world that Western philosophy had created. They saw a futile Vietnam War in progress and the creation of terrifying methods of destruction. They saw half a world in abject poverty and the other half obsessed with possessions. Technology and mechanization were spawning apathy and loss of initiative. Complete disillusionment with political leaders, because of Watergate, added to their malaise. They began to rebel against Western political thought, religious thought, and artistic thought. Obvious signs of protest were experimentation with drugs and avoidance of the military draft.

As part of the artistic revolt, a portion of the audiences and composers who preferred classical music turned vehemently away from the dissonant sounds, mathematical forms, and electronic complexities of contemporary American music. Artists who had been fed all their lives on rock-and-roll, as well as traditional classical literature, began to investigate the music of China, India, Africa, and Bali. They were searching for simpler melodies, more consonant harmonies, and forms derived from nature instead of from computer generated ratios. From this search there evolved still another "ism": minimalism.

Minimalism encompasses a combination of musical trends and passions that can only be possible in a world growing in upon itself, as is ours today. Here are some of its characteristics:

1. techniques of classical composition combined with the harmonies and rhythms of rock-and-roll.
2. studio technology (sound tracks, tape, computers, synthesizers) combined with virtuosic ability on traditional native instruments.
3. the Eastern premise that everything is in one continuous process-of-becoming.
4. an unremitting steady pulse.
5. seemingly endless elaboration on melodic and rhythmic patterns.
6. fast, virtuosic passages.
7. deliberate avoidance of opposites and tensions.
8. deliberate avoidance of contrasting themes.
9. deliberate avoidance of plot suggestion, description, and emotional message.

Major contributors. Four composers whose names are associated with the development of minimalism are Terry Riley, LaMonte Young, Steve Reich, and Phillip Glass.

Terry Riley (b. 1935)

Terry Riley was born on June 24, 1935, in California. After earning his Master of Arts degree in Composition at the University of California at Berkeley, he worked in New York with a group of young composers called the Fluxus Group, one of whom was LaMonte Young. In 1962, he traveled to Europe and worked at the sophisticated ORTF recording studios. Here, he had the means to experiment with tape loops, and he began to incorporate many repetitions of short melodic phrases in his compositions. Mescalin Mix, a slow and meditative piece using this technique, was one result.

In 1964, he wrote In C, a composition which even today is considered *the* definitive minimal work. In C is a collection of 53 short melodic motifs to be played with a steady rhythm by any number of pitched instruments. Each performer may play any motif in any order for as long as he pleases. Sounding above this are two high c's persistently repeated on a piano. The result is a complexity of multiple canons and polyrhythms, and a continuous change of timbre, held together by a relentless underlying pulse. In C is an example of Riley's desire to focus not on themes and their development but on the quality of a sound itself. By destroying a sense of form and recurring melody, Riley hopes that the listener will listen in a new way, in this case to the pure acoustic properties of each musical event.

In the late 1960's, Riley studied in India with Pandit Pran Nath, an expert in the classical style of Indian vocal music. In 1970, A Rainbow in Curved Air reflected these studies by the use of Indian modes and rhythmic cycles.

Since then, Riley has continued to compose for both electronic and acoustic instruments and has received several commissions for film scores. He has also expanded his studies of ethnic music. His latest recorded work, Salome Dances for Peace, a 115-minute-long string quartet written in 1986, incorporates jazz and blues, Indian ragas, Middle Eastern scales and the contrapuntal techniques of Bela Bartok.

LaMonte Young (b. 1935)

LaMonte Young was born in a log cabin in Idaho on October 14, 1935. He, too, was an academically prepared musician. A clarinet and saxophone player, he earned his Bachelor of Arts in Music at UCLA and then went on to do graduate work at the University of California at Berkeley. After studying electronic music with Richard Moffried and composition with Karlheinz Stockhausen, he founded the Theater of Eternal Music, primarily to have a proper space for performance of his own compositions. Composition 1960, No. 2 is remembered for its instructions to build a fire, but No. 10 of Composition 1961, Nos. 1-29 contains in its title what many believe to be the best existing definition of minimalism in music. The performer is told to "draw a straight line and follow it."

In 1963 Young married Marian Zazeela, whose light-show creations are often an integral part of his compositions, and in 1966 he was the recipient of a Guggenheim Fellowship.

Young's early works show influence of the 12-tone system of the Viennese School and the aleatoric techniques of Cage. As he progressed to mixed media, however, his music began to include a strong drone aspect. (The word "drone" is used here not in its original meaning of one continuous low tone but to refer to any melodic or rhythmic idea which is repeated many times. The term "ostinato", explained in Chapter 4, has a similar

meaning.) His studies in oriental music include a knowledge of the affects of all intervals, including the premise that perfect intervals are comforting in times of stress. At one time, Young had the drone of a perfect 5th sounding in his home for three years. While it is possible to consider drone technique monotonous, it is a natural musical reflection of our circulatory and nervous systems, two drones that are necessary for human existence.

Steve Reich (b. 1936)

Steve Reich, who was born in New York on October 3, 1936, studied philosophy at Cornell University and then attended The Juilliard School. In 1962 he attended Mills College, where he was a student of Darius Milhaud (1894 - 1974) and Luciano Berio (b. 1925). In 1970 he attended the Institute of African Studies at the University of Ghana where he began to master techniques of African drumming.

Reich writes large, long compositions using sparse, minimal materials. One of his most well-known, Come Out, written in 1966, was inspired by the five-word phrase, "come out to show them," extracted from testimony of six boys who were arrested for murder and beaten at a police station during questioning. Using what is termed the 'phasing' process in taping, it begins looping the spoken phrase at one speed and dubbing a second loop at a faster speed, producing a canon in which the second voice finishes before the first. In a very short time, the words lose their meaning and become a syllabic drone. The same technique is used in his pieces Violin Phase and Piano Phase, in which two identical instruments play one phrase rhythmically "out of sync," so that different patterns of melody and rhythm are born and die throughout the composition.

Another Reich composition, perhaps his most well-known, is Drumming, written in 1971. One recording of the piece covers two complete LP's; a typical performance lasts about one and one-half hours. Phasing is used again, this time in combination with a very gradual change in timbre from bongo drums to marimba. During the process, the sound of the human voice enters and imitates the exact sound of the instruments. Glockenspeil and piccolo complete the instrumentation. During the entire piece, only one basic rhythmic pattern is used, but its construction is such that it can be broken into groups of two, three, or four units, producing a great variety of rhythmic combinations.

Reich wants his music to be an obvious, gradual process which "runs by itself" once set in motion by the composer. He says "I want to be able to hear the process happening throughout the sounding music. To facilitate closely detailed listening, a musical process should happen extremely gradually."[1] He compares this to "pulling back a swing, releasing it, and observing it gradually coming to rest" or "placing your feet on the sand by the ocean's edge and watching, feeling, and listening to the waves gradually bury them."[2]

Different Trains, a work completed in 1988, is a three-part piece in which all melodies derive from tapes of people speaking - a Pullman porter and Holocaust survivors among them. Timbre, pitch, and tempo come directly from their words. Reich contrasts his poignant train travels as a child between his mother on the West coast and his father on the East coast with the Jews traveling on other trains from Denmark or Hungary to Poland - and never returning.

Phillip Glass (b. 1937)

Phillip Glass, the most well-known and financially successful of these four minimalists, focuses on opera, film, and ensemble pieces for his creativity. Born in Chicago on January 31, 1937, he worked in his father's record store and studied the flute before attending the University of Chicago and the Juilliard School. He went on to study composition with Nadia Boulanger in Paris. In 1966 he worked with Ravi Shankar, and a year later studied with the tabla player Alla Rakha. He has often been forced to support himself as a taxi driver in New York City, where he keeps a residence, and many listeners hear sounds of a huge city in his ensemble music.

The Phillip Glass Ensemble was formed in 1967. It was made up of several young electronic keyboard players who were forced to develop "impeccable finger control, hand independence, concentration, and plain old endurance"[3] in order to produce the teamwork required for his music. Today, a live performance of his expanded ensemble exhibits a virtuosic, controlled, human, musical machine performing in a symmetrical setting on a clean stage.

Glass' music takes its steady beat and simple diatonic harmonies from rock and roll, but more important is its distinguishing additive process and cyclic structure. In the additive process, a short musical idea is repeated several (mathematically precise) times. This is followed by adding a new or repeated pitch before, after, or within the original fragment and repeating this new idea several times. As more tones are added or subtracted, the same musical germ produces a wide variety of rhythmic motives. Cyclic structure is created by superimposing two different rhythmic patterns of different duration and repeating them until their starting points again coincide, making a full cycle. The combination of these two techniques produces structures of varying lengths and great complexity.

A catalog and discography of Glass' works through 1987 may be found in his book Music By Philip Glass. Early works include such titles as One Plus One for amplified tabletop (1967) and Music in Contrary Motion and Music in Similar Motion (1969) written expressly for his ensemble. In 1976 he completed his popular first opera, or "theater piece," Einstein on the Beach. This innovative work consists of 3 main images - a nineteenth century train, a trial, and a twentieth century spaceship - presented in 4 acts, 9 scenes, and 5 connecting interludes. The interludes are called Knee Plays because they function as flexible joints between acts. "Einstein" has a duration of four and one-half hours. It has no intermission, no plot, and no words which function as lyrics. It is an attempt to portray in music and staging a poetic picture of Einstein and the way his mind may have worked. Throughout the opera , Einstein appears in white shirt and baggy pants, often smoking a pipe or playing a violin.

A short description of Act III, Scene 1 will give the reader a hint of the performance style. The chorus, representing a jury, sings a two-note melodic fragment. A ballet dancer (the Defendant) sits on a stool, dances, and lies down to recite a repetitive "supermarket" speech. She moves along the stage, eventually appearing as Patricia Hearst in regulation guerilla-warfare clothing, including machine gun. She points the gun at the audience. As others imitate her movements, her arms become chained and she returns to her original position on the stool. At the end of the scene, she recites a text written by Christopher Knowles which begins "I feel the earth move...."

In 1982, Glass completed the first of a planned trilogy of films in collaboration with director Godfrey Reggio and cinematagrapher Ron Fricke. Koyaanisqatsi, a Hopi Indian

word meaning "life out of balance," is an avant-garde documentary that has become a cult hit. Consisting of images of America moving at an exaggeratedly fast or slow pace, reinforced by Glass' machine-like music, the wordless film displays for the viewer a beautiful and disturbing view of the mechanized society America accepts as normal.

In 1988, the second film of the trilogy was premiered. Powaqqatsi, meaning "the sorcerer who steals from life," focuses on Third World countries and men who live directly from their contact with land and water - men whose tools and toys are made with their own hands. The film attempts to describe how, in the name of progress, advanced countries feed on the innocence and poverty of less-developed cultures. Koyaanisqatsi's pace matched its visual images - very slow for the breathtaking mountain views, quicker for shots of the Midwest, and uncomfortably fast for big-city scenes. Powaqqatsi's pace is much slower than any normal film. Following the rhythm of the solar calendar, its director intended to encourage a meditative mental state in which images would "penetrate into the conscious mind."[4]

The third film of the trilogy is to be called Nagaqatsi, meaning "war as life."

Glass' other works include the operas Satyagraha (1980), the term used by Mahatma Ghandi for his non-violent disobedience in South Africa, and Akhnaten (1983), a pharaoh who was the first ruler to establish worship of the Egyptian sungod Aten. Recordings of his Glassworks and Glasspieces are commercial successes, as is Songs From Liquid Days, a song cycle written and recorded in collaboration with Laurie Anderson, David Byrne, Paul Simon, and Suzanne Vega. In 1984, Glass was commissioned by the Olympic Committee to write the music for the opening and closing ceremonies of the Summer Olympics in Los Angeles. This work, for chorus and orchestra, is entitled The Olympian.

All four of these composers are better known in Europe than in America. All four knew each other and influenced each other during the development of their careers. All four turned from the norm of a stable career base in academia, and all have made the decision to play their own music instead of waiting for recognition from others. Reich and Glass have developed a large following and usually play before sold-out houses, a rarity in performances of today's "serious" music.

Opinions, Pro and Con. An advocate's explanation of this phenomena would be that minimalism reflects aspects (some would say annoyances) of contemporary life. It exaggerates the harmonic and rhythmic triteness of today's pop music. In its avoidance of development and focus on repetition, it encourages the mind to wander. Its sudden harmonic shifts are like commercial interruptions on television. Its emphasis on motor skills and precise technique remind its audiences of computers and machines - and humans as computers and machines. Advertisers' underlying message of "Don't think, obey," or "Be special! Join the herd!" becomes disturbingly evident. Its mantra-like drones resemble repeated phrases in the speeches of politicians, who rely on the premise that if a statement is repeated enough, it will become truth. Its patterns replace each other like the numbers on a digital clock. Its intricate rhythmic shifts reflect the different rates of speed at which humans function every day.

The composers themselves view their performances as rituals expressed in music. The required discipline and concentration result in a loss of ego and a euphoria as the musicians, and hopefully the listeners, become part of the music. Reich and Stockhausen believe that it is a prime function of today's music to create the sacred atmosphere which

people can no longer find in their daily lives and.to enable each listener to reach a state of ecstasy.

Not everyone respects minimalism. Critics say that it appeals only to the body and not to the mind; it might make people move, but it discourages them from listening. "Mindless" and "formless" are two descriptive terms so common that they have become a drone in themselves. Music critic Robert Jones, who is now a friend of Glass, recalls a review of Glass' music which he wrote in 1969. "How Now ....consisted of a six-note doodle on the electric organ....the doodle shifted up and down, stuttered and threatened to fragment, and finally ended some twenty minutes later the same way that it began. Two Pages was much the same sort of thing, only without the variety of the first."[5] This writer's favorite comment is in the words of David Cope. He suggests as "the ultimate minimal structure: 0 duration, 0 instruments, 0 performers, 0 audience."[6]

The piece is made up of seven segments that are to be played in order.

When playing a segment for the first time the duration should be at least two minutes.

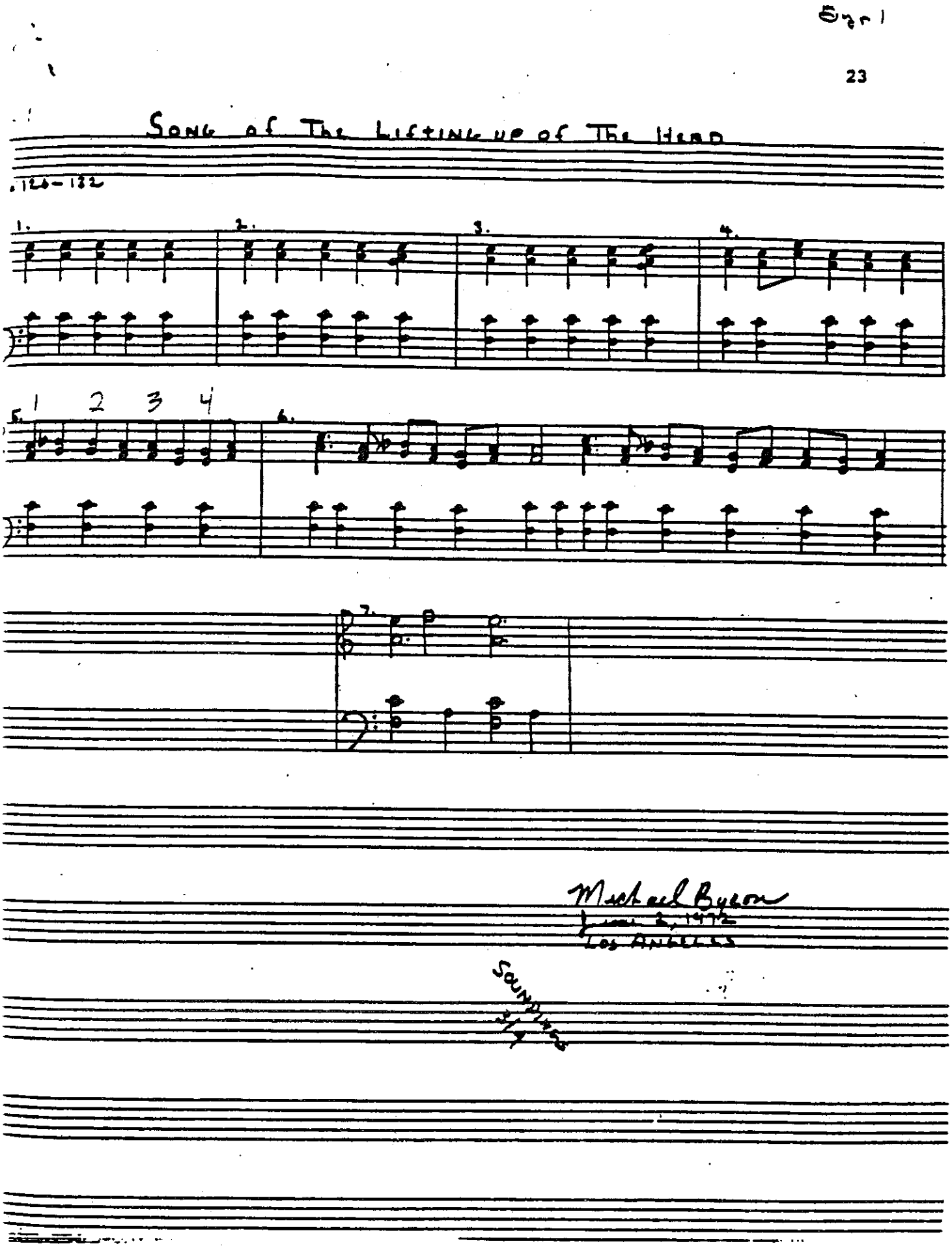
After a segment is played it may be incorporated into the piece at any time until the final segment is reached. Once this point is reached previous segments may no longer be played.

Dynamics should be p-mf throughout the piece.

Damper and una corda pedals should be depressed through most of the piece.

When ending the piece keep both pedals down until the piano stops ringing.

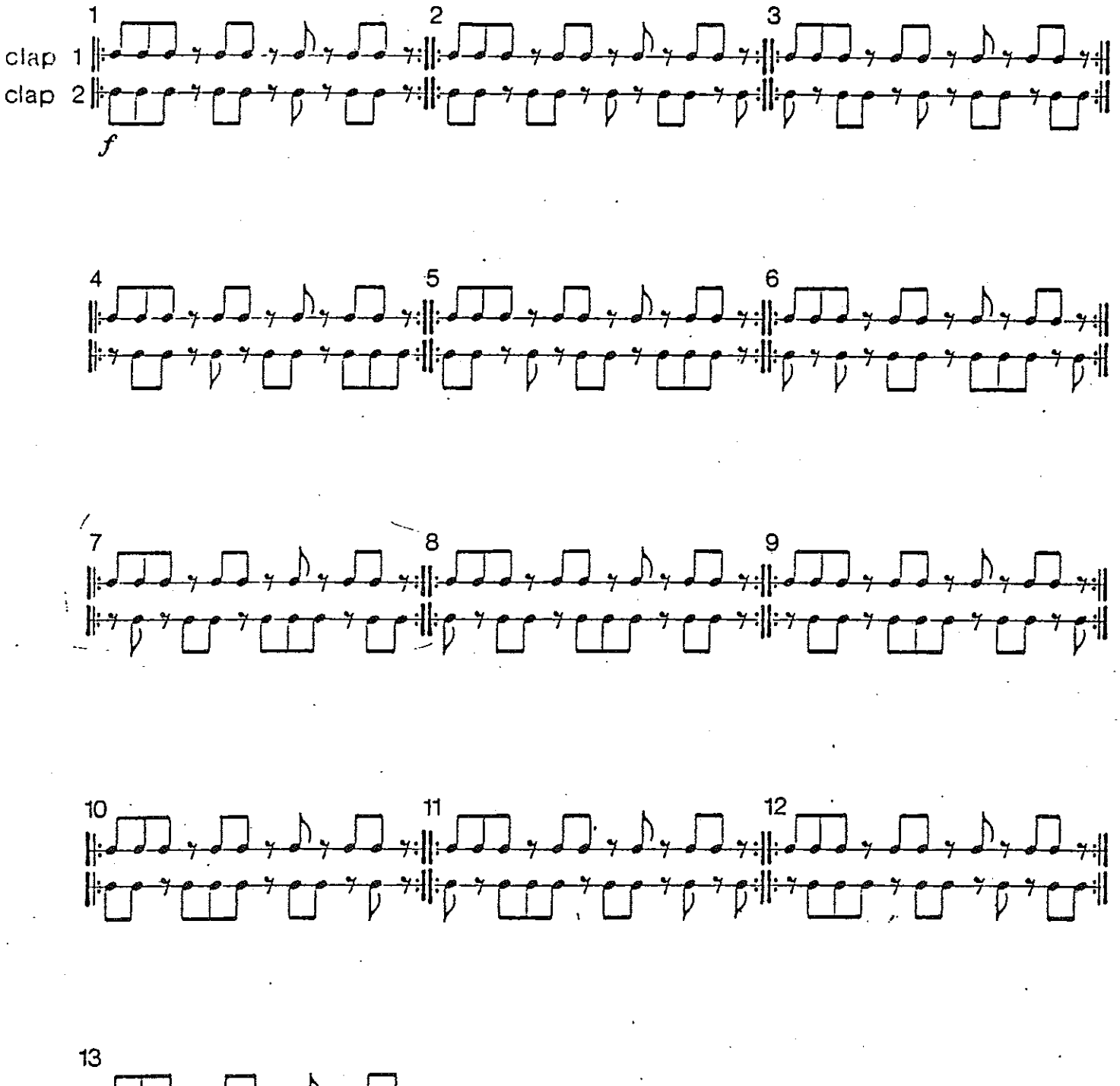
Michael Byron
June 2, 1972
Los Angeles


SONG of THE LIFTING UP OF THE HEAD
Michael Byron
Los Angeles

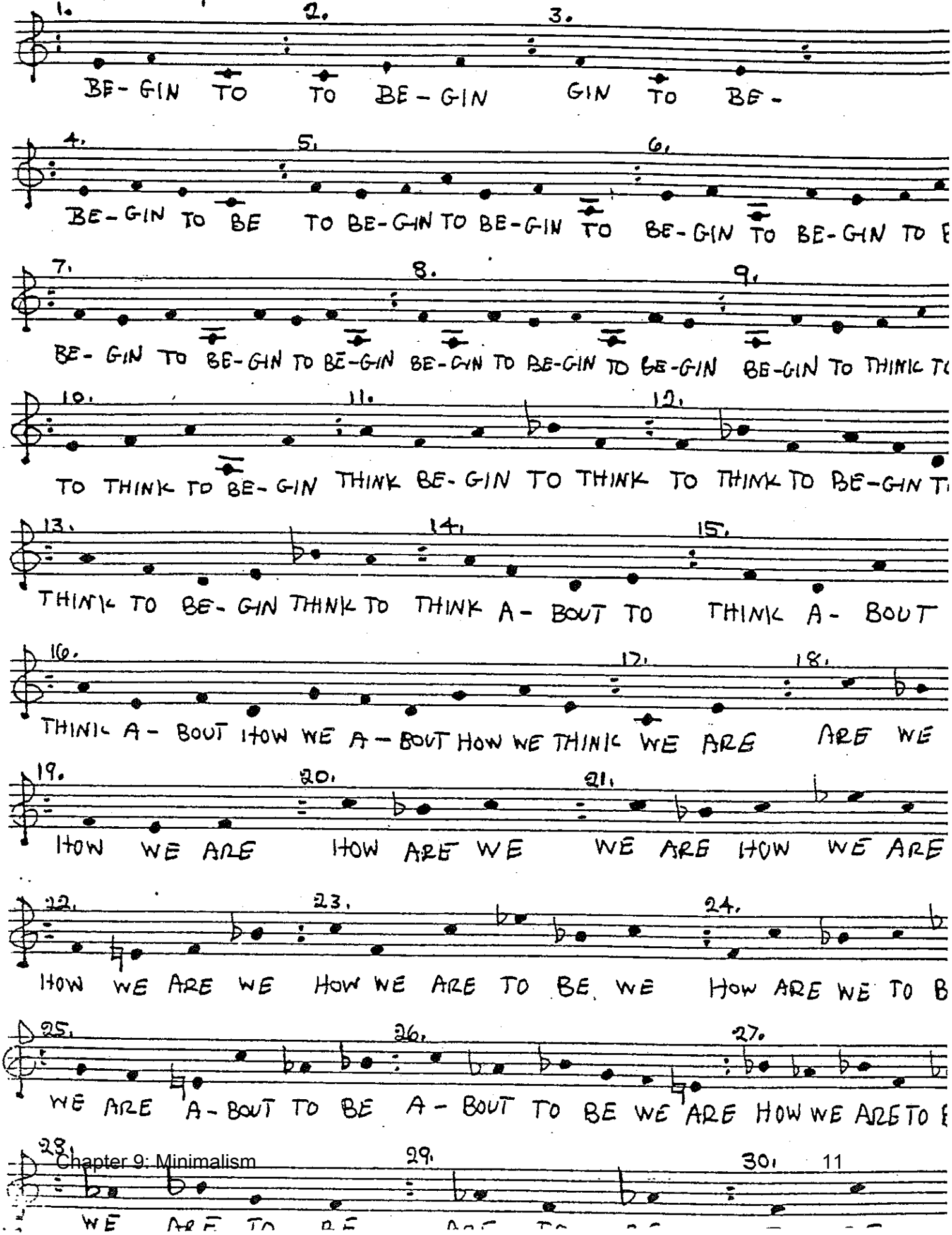
The number of repeats is fixed at 12 repeats per bar. The duration of the piece should be approximately 5 minutes. The second performer should keep his or her downbeat where it is written, on the first beat of each measure and not on the first beat of the group of three claps, so that the downbeat always falls on a new beat of the unchanging pattern. No other accents should be made. It is for this reason that a time signature of 6/4 or 12/8 is not given – to avoid metrical accents. To begin the piece one player may set the tempo by counting quietly; "one, two, three, four, five, six".

The choice of a particular clapping sound, i.e. with cupped or flat hands, is left up to the performers. Whichever timbre is chosen, both performers should try and get the same one so that their two parts will blend to produce one overall resulting pattern.

♩ = 160-184 Repeat each bar 12 times/Répétez chaque mesure 12 fois/Jeden takt zwölfmal wiederholen



OLSON III

Terry Riley

SATIE
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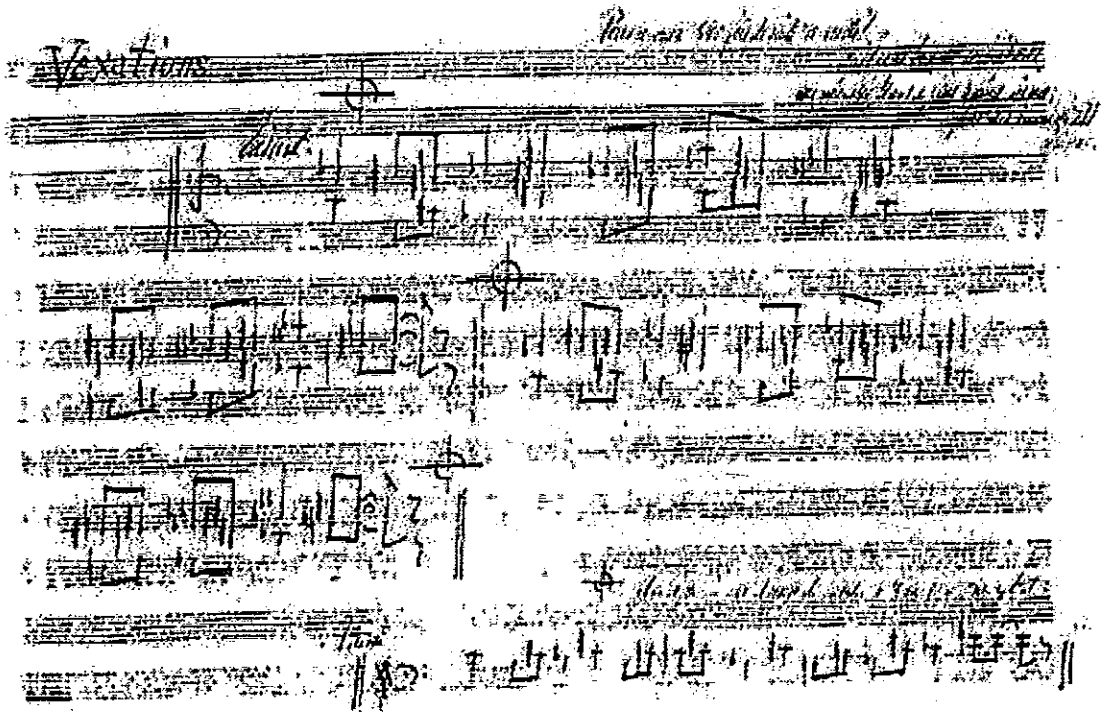
To play this motif 840 times in succession, it would be advisable to prepare oneself beforehand, in the deepest silence, by serious immobilities.

This enigmatic instruction, on a single page of music bearing the title Vexations, has turned the strange piano piece into a legend in the annals of experimental music.
The work emerged from obscurity in 1949 when Henri Sauguet, a friend of Satie in his last years, drew it to the attention of John Cage. At first Cage found it interesting as a concept but dismissed the possibility of a performance: "True, one could not endure a performance of Vexations ...but why give it a thought?". Nevertheless, in September 1963 Cage organised the first 'complete' performance of Vexations at the Pocket Theatre, New York. Since that occasion, Vexations has been performed numerous times by individuals and groups.

In short, Vexations is as puzzling to the eye as it is to the ear. This accounts for the phenomenon, noted by Gavin Bryars, that performers - even after repeating the piece many times - have difficulty remembering it and must maintain intense concentration to avoid errors. The deliberate notational obfuscation compels the performer to confront the piece anew with each repetition.

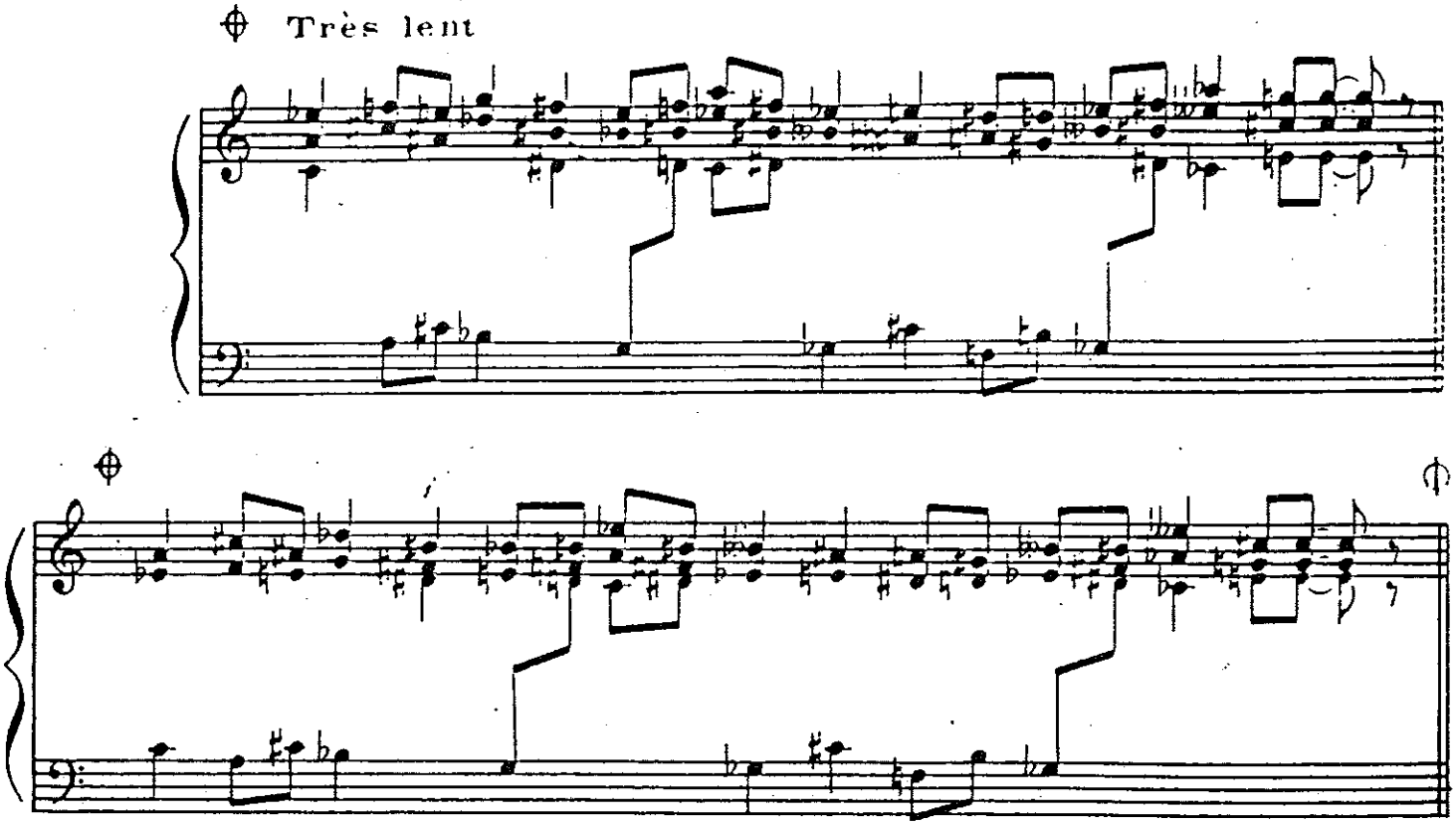
Stephen Whittington

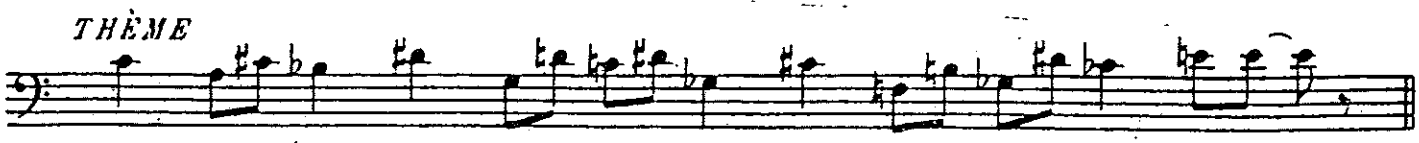


Satie, *Vexations* from *Pages mystiques* (1893-5)

NOTE DE L'AUTEUR:

Pour se jouer 840 fois de suite ce motif, il sera bon de se préparer au préalable, et dans le plus grand silence, par des immobilités sérieuses



A ce signe il sera d'usage de présenter le thème de la Basse

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mixing for the entire tour. But at that time I couldn't find a record company willing to take the chance of recording *Einstein*.

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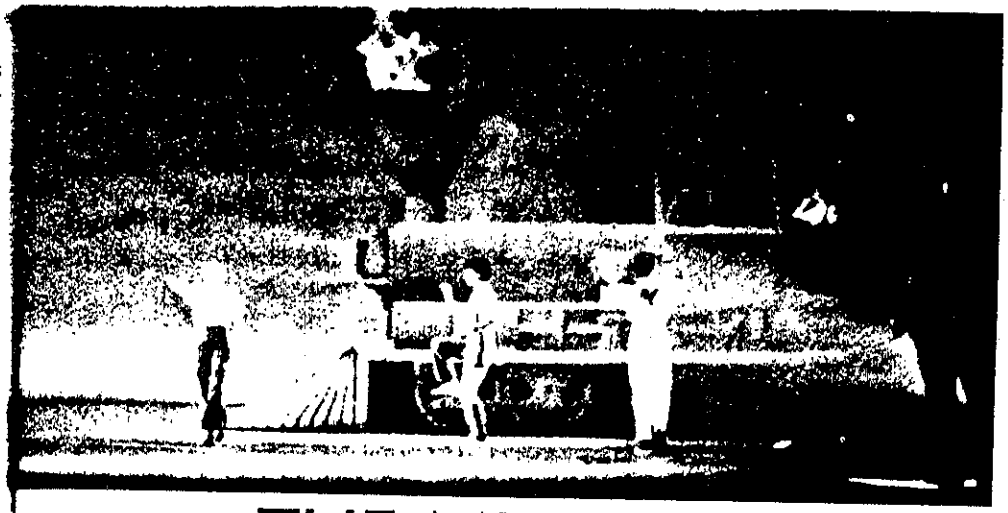


THE MUSIC

The musical forces for *Einstein on the Beach* were built around the ensemble for which so much of my music since 1968 has been written. This consisted of two electric organs, three winds (doubling on saxophones, flute and bass clarinet) and one solo soprano voice. A chamber choir of sixteen mixed voices carries the weight of the vocal music in *Einstein*. From that group, a second soprano soloist is sometimes used with the regular ensemble soloist (as in the first Train scene); a tenor soloist is also used, again with the ensemble soloist, for the duet in the Night Train scene. A violinist, costumed as Einstein, plays a featured part and completes the lineup.

Einstein was planned as an extended evening performance (four hours, forty minutes) without formal, prescribed intermissions. We knew there would be few people able to sit straight through the entire work, and the audience was expected to take their own breaks (quietly, of course) when needed. Personally, I can say that, after more than fifty performances of *Einstein*, I have never seen the entire work straight through without interruption, though many people constantly assure me they have, as it were, taken it "whole." Still, the work was never intended to be seen as a whole, narrative piece. Its "wholeness" comes from its consistency of subject matter and overall structure and becomes the theatrical equivalent of an "act of faith" for the audience.

The sheer unbroken length of *Einstein* clearly presented musical

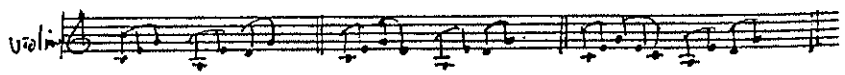
problems that had to be worked out. With that much music to be performed, the orchestra had to be divided into smaller alternating groups, everyone coming together only occasionally for the big *tutti* numbers. The Knee Plays, for example, feature the chorus and violin with occasional help from one organ, and the Trial scenes also use smaller groups of instruments with chorus. The large ensemble and vocal numbers are left to the Train, Dance, and Spaceship scenes. The violin is featured in the Knee Plays, starting with the second one. Since the violinist is sitting halfway between the orchestra pit and the stage, it focuses attention in front of the curtain—a real advantage since there was a scenery change during each of the Knee Plays.

This was actually one of my minor miscalculations in writing *Einstein*. Since the Knee Plays were conceived for smaller groupings of musicians and produced a more intimate effect, they were not very loud. Meanwhile, behind the curtain, huge pieces of scenery were being dragged about, sometimes dropped, and this could often be heard quite clearly over the music. Intermezzo music is always a problem. Just when you would like the music to be quiet, creating a sense of repose between scenes, that's really when it needs to be as loud as you can make it, to cover all the backstage business. (I've continued to write quiet interlude music for other operas, hoping for the best with the backstage crews.)

As I have mentioned elsewhere in these pages, *Music in Twelve Parts*, the extended work written between 1971 and 1974, was a catalogue of ideas on rhythmic structure with which I had been working since my Paris pieces of 1965. The two major techniques that had evolved were those I called *additive process* and *cyclic structure*.

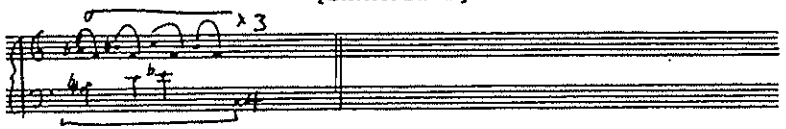
Additive process is one of those very simple ideas that can quickly lead to very complicated procedures. It can easily be explained: A musical grouping or measure of, say, five notes is repeated several times, then is followed by a measure of six notes (also repeated), then seven, then eight, and so on. A simple figure can expand and then contract in many different ways, maintaining the same general melodic configuration but, because of the addition (or subtraction) of one note, it takes on a very different rhythmic shape. Example A, taken from the first Trial scene of *Einstein*, shows this process as played in the violin part.

[EXAMPLE A]



I have used rhythmic cycles (repeating fixed rhythmic patterns of specific lengths) to create extended structures in my music by superimposing two different rhythmic patterns of different lengths. Depending on the length of each pattern, they will eventually arrive together back at their starting points, making one complete cycle. This has been described by some writers as sounding like "wheels inside wheels," a rather fanciful but not wholly inaccurate way of evoking the resulting effect. The opening of the first Train scene from *Einstein* is a good example of this (Ex. B). In this case, three repeats of the upper part (indicated by "X3") are equal in length to four repeats of the lower part (indicated by "X4").

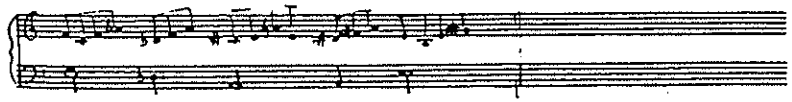
[EXAMPLE B]



When the cyclic and additive processes are combined, some extremely interesting and complex structures are produced. This was the main overall musical device of *Music in Twelve Parts*, and it is present also in *Einstein*, particularly in Train One, from which the last example was taken.

In *Another Look at Harmony*, written just before *Einstein* and an important thematic source for the opera, I turned to a new problem. What I was looking for was a way of combining harmonic progressions with the rhythmic structure I had been developing, to produce a new overall structure. This turned out to be a problem of such absorbing interest that it occupied me almost completely for the next ten years, and the results can be heard in all the music I wrote during that time. In *Einstein* the problem is approached in half a dozen different ways; each scene, in fact, presents a different way of "solving" the problem. The two following examples will give an idea of how this was done.

[EXAMPLE C]



Example C is taken from the closing section of Train One. It is music that occurs throughout the work, forming the basis of the Spaceship music in Act IV as well as appearing in Knee Plays 3, 4 and 5, making it one of the major thematic devices of *Einstein*. At first glance, Example C appears to be a traditional cadential formula, the time-honored closing phrase which, in a variety of forms, became highly developed during the Baroque period and lasted well into the present. However, there is an altered or pivotal chord in the middle that results in a closing chord a half-step below what one would normally expect. It is this lowered resolution of the cadence that motivates its repetition. In the final scene of *Einstein*, this goes on for over eight minutes. What sustains musical interest over that length of time is the additive process which, when applied to the cadence, produces a lengthy and dramatic rhythmic development. Written in chords, the cadence reads as follows:

key of F minor

f – D♭ – B♭♭

(I) (VI) (♭IV)

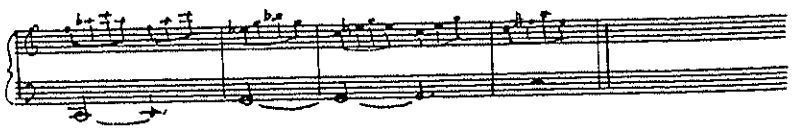
A – B – E

(IV) (V) (I)

key of E Major

The pivot chord is B♭♭ which sounds as A in the new key of E.

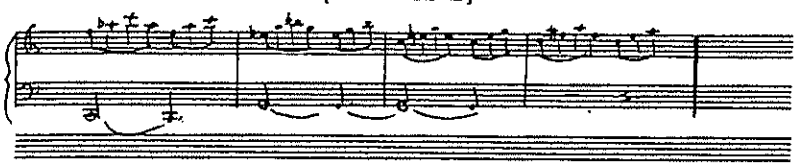
[EXAMPLE D]



The next example (Ex. D) comes from the closing section of Trial One. It is repeated in Trial Two and finally in the Bed scene of Act IV. Here a straightforward four-chord sequence is outlined. With each repetition, the length of one chord is increased by a group of eighth notes as

the additive process is applied to the upper part, as shown in Example E. This can easily be heard as the two notes of the bass line become successively longer during the course of the section.

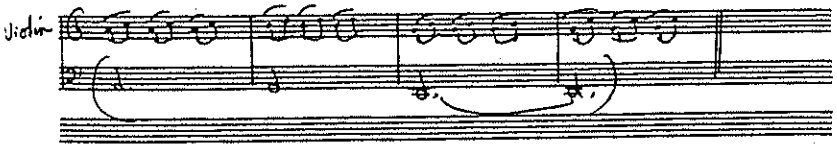
[EXAMPLE E]



The five Knee Plays of *Einstein* appear as interludes between the main scenes, and they contain the two major themes of the work. The first has just been described as the cadential theme. The second appears in all five Knee Plays and opens and closes the opera. It is shown in Example F in the form that we first hear it.

[EXAMPLE F]

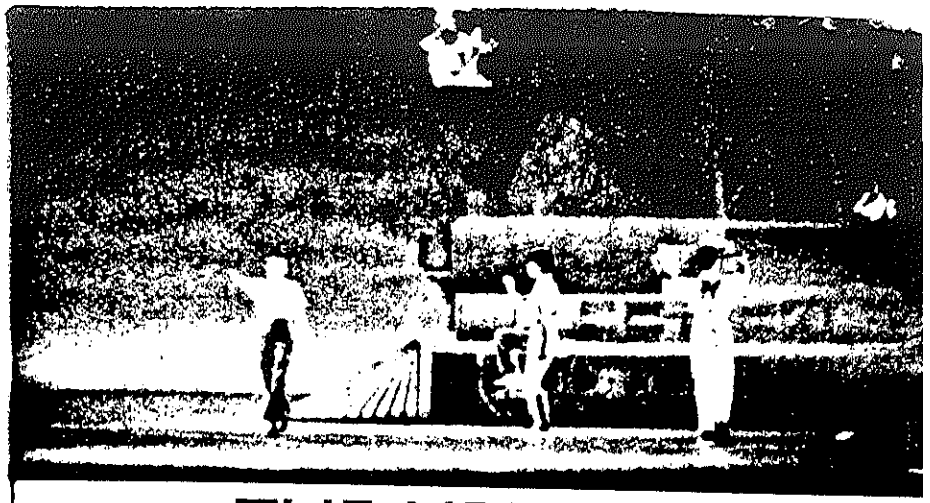
In a more lyrical form, it is heard in the third, fourth and fifth Knee Plays, in either the chorus or violin.

[EXAMPLE G]

In Example G, we see it in the violin part as it is played in the fourth Knee Play. This theme takes on even greater importance when viewed from the perspective of the next two operas. Though I didn't know it at the time, this would become the "Trilogy Theme" and would reappear at crucial moments in both *Satyagraha* and *Akhnaten*.

It is worth noting another aspect of the development, in *Einstein on the Beach*, of this new approach of combining rhythmic and harmonic

structure into an overall unified process. With the introduction of what is known as "root-movement harmony" (since the "root," or "fundamental," of the chord creates the impression of moving *through* as well as *with* the chord progression), a new element came into play in my music. Harmonic movement is central to our perception of expressiveness in music, at least in the periods from the Baroque to the Late Romantic. Once this movement had entered my music, it marked a sharp break with the very rhythmically charged, but harmonically static, music I had written before.

In its own way, the pre-*Einstein* music, rigorous and highly reductive, was more "radical" in its departure from the received tradition of Western music than what I have written since. But as I had been preoccupied, at that point, with that more radical-*sounding* music for over ten years, I felt I could add little more to what I had already done. Again, it is surely no coincidence that it was at the moment that I was embarking upon a major shift in my music to large-scale theater works that I began to develop a new, more expressive language for myself.



THE LIBRETTO

EINSTEIN ON THE BEACH

An Opera in Four Acts
by
Philip Glass—Robert Wilson

SPOKEN TEXTS BY
Christopher Knowles/Samuel M. Johnson/Lucinda Childs

SOLO ROLES
Solo Soprano Solo Tenor Solo Violinist

CHORUS
16 Voices (SATB)

ORCHESTRA
The Philip Glass Ensemble

NOTE: Texts are repeated to fill the time allotted to them in the staging book.

PART 1

The music for "Einstein on the Beach" was written in the spring, summer and fall of 1975. Bob Wilson and I worked directly from a series of his drawings which eventually formed the designs for the sets. Prior to that period, we had reached agreement on the general thematic content, the overall length, its divisions into 4 acts, 9 scenes and 5 connecting "knee plays". We also determined the makeup of the company—4 principal actors, 12 singers, doubling when possible as dancers and actors, a solo violinist, and the amplified ensemble of keyboards, winds and voices with which my music is usually associated.

The three main recurring visual themes of the opera (Train/Trial/Field with Spaceship) are linked to three main musical themes. The overall thematic divisions of the opera are as follows:

KNEE PLAY 1 (Chorus and electric organ)

Act I	Scene I	TRAIN (ensemble with solo voice and chorus joining at the end)
	Scene II	TRIAL (chorus, violin, electric organ and flutes)

KNEE PLAY 2 (Violin solo)

Act II	Scene 1	DANCE 1—Field with Spaceship (ensemble with solo voice/dancers)
	Scene 2	NIGHT TRAIN (2 voices, chorus and small ensemble)

KNEE PLAY 3 (Chorus *a capella*)

Act III	Scene 1	TRIAL/PRISON (chorus and electric organ, ensemble at the end)
	Scene 2	DANCE 2—Field with Spaceship (6 voices, violin, electric organ)

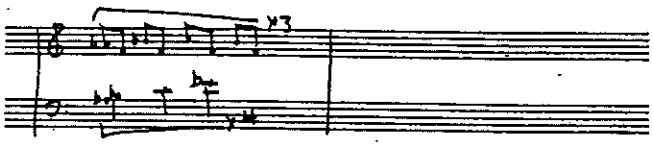
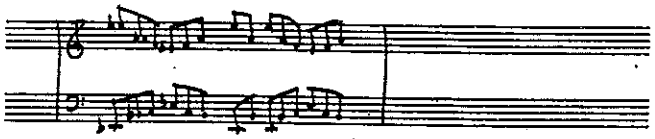
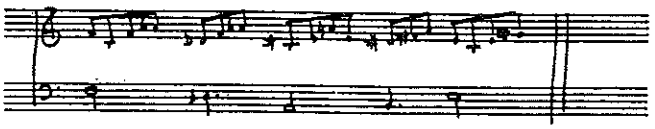
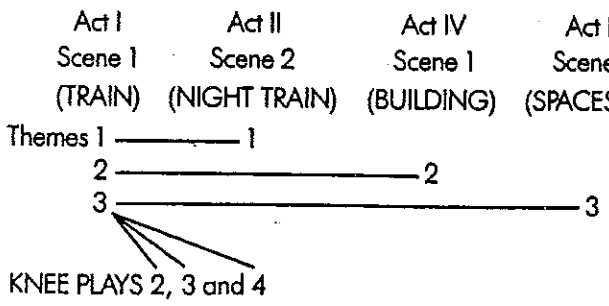
KNEE PLAY 4 (Chorus and violin)

Act IV	Scene 1	BUILDING/TRAIN (chorus and ensemble)
	Scene 2	BED (solo electric organ and voice)
	Scene 3	SPACESHIP (chorus and ensemble)

KNEE PLAY 5 (Women's chorus, violin and electric organ)

The most important musical material appears in the knee plays and features the violin. Dramatically speaking, the violinist (dressed as Einstein, as are the performers on stage) appears as a soloist as well as a character in the opera. His playing position—midway between the orchestra and the stage performers—offers a clue to his role. He is seen then, perhaps as Einstein himself, or simply as a witness to the stage events; but, in any case, as a musical touchstone to the work as a whole.

It might be useful to delineate some of the visual/musical transformation of the material which makes up the opera:

The image of the train appears three times—first in Act I, Scene 1, then in Act II, Scene 2 (as the Night Train), and finally in Act IV, Scene 1, where it appears in the same perspective as the Night Train, but this time transformed into a building. The music for the first train is in three parts, or "themes". The first theme (based on the super-imposition of two shifting rhythmic patterns, one changing and one fixed) makes up most of the music of this scene.

The second appearance of the train image, the Night Train, is a reworking of the first theme, this time with a larger complement of voices. The music for the Building is a development of the second theme, recognizable by its highly accented rhythmic profile, in which the repeated figures form simple arithmetic progressions.

The third theme is a rhythmic expansion of a traditional cadential formula. This "cadence" theme forms the principal material of the opera, being used for the 2nd, 3rd and 4th Knee Plays, as well as almost the entire music for Act IV, Scene 3, the Spaceship.



Terry Riley
IN C

Terry Riley (b. 1935) received his M.A. in Composition from the University of California at Berkeley and has since toured extensively in both the United States and Europe, performing on keyboards and soprano saxophone in various contexts. He has been particularly interested in the effects of repetition extended over long periods of time with subtly changing phase relationships. His essentially static music can be regarded as either uneventful or totally eventful, depending on one's viewpoint. *In C*, composed in 1964, can be performed by an ensemble of any size and instrumental combination. The fifty-three short, repeatable melodic fragments are to be played in order and in tempo with an unwritten piano part consisting of continuous eighth-notes, using the two highest C's on the piano. Each player decides when to move from one fragment to the next, resulting in a complex canonic texture which is different with every performance. The music ends when the last player has completed the final fragment.

All performers play from the same part.

There are 53 repeating figures, played in sequence.

They are to be taken consecutively with each performer determining the number of times he repeats each figure before going on to the next.

The pulse is traditionally played by a beautiful girl on the top two octaves of a grand piano. She must play loudly and keep strict tempo for the entire ensemble to follow.

The tempo should be determined by how fast the ensemble can execute the smallest units (16th notes)

All performers must strictly adhere to the tempo of the pulse.

After the pulse has begun to sound each performer determines for himself when to enter on the first figure.

As a general rule the performers should remain within a compass of 4 or 5 figures of each other occassionally trying to merge together in a unison. This means that although each performer is essentially free to repeat a figure as many times as he wishes, he must ultimately abide by the pace taken on by the majority in the ensemble.

The ensemble should sit as close together as is comfortably possible. All performers radiating outward from the pulse who should be in the center.

It is O.K. to amplify instruments that can't naturally play so loud such as strings flutes, harpsichords etc.

All parts should be played at the written pitch. It is generally o.k to transpose up an octave. Transposing down an octave should be discouraged unless several performers are doing so and even then they should be extremely careful in choosing alignments and try to absorb the tendency to stick out.

Since performances often go over an hour each figure can easily be repeated for a minute or longer. (performances could last days, months, a year - a figure for each week with the closing one to start the new year)

Don't be in a hurry to move from figure to figure. Stay on your part and keep repeating it, listening for how it is relating to what the rest of the ensemble is playing. If it sounds like everyone is playing in the same alignment of a figure, you may shift yours to create an opposing alignment.

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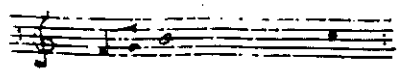
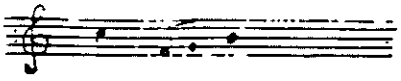
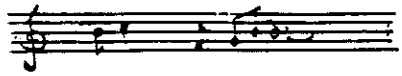
Say that most of the ensemble is playing figure #12. like this;



you may choose to align like this; →



or this; →



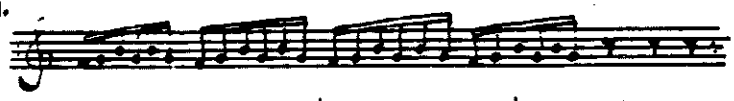
and so on.

In this way you have not 53 figures but literally thousands and it is part of the creative task of the ensemble to explore the different combinations.

Play at a good loud volume but avoid letting your part get isolated from the others. Make all exits and entrys as inconspicuous as possible.

In order to play continuously without fatigue a figure can be repeated in groups of 4 or 5 with a rest included to form an overall pattern consisting of X number of repetitions plus a rest. The duration of the rest may be equal to the duration of the figure being repeated as illustrated below.

#11.



This makes the part more stable and symetrical and allows it to groove better with the rest of the ensemble. especially if everyone else is stabilized in a pattern formation. However any number of repetitions and any duration of rest is permitted.

Changes should not be dramatic. The sequence should very gradually unfold. when each performer reaches figure #53 he should stay on that figure until the entire ensemble has arrived and a unison is achieved. the players can then gradually drop out, the pulse continuing a few moments after the rest of the ensemble has finished.

IF a performer comes to a figure he cannot play he may omit it.

The ensemble should learn all figures in unison before attempting any combinations. It is essential that everyone play the figures correctly.

Any number of instruments can play. In general the more players, the better it goes. Several Keyboard instruments should be used as well as percussion instruments that are tuned such as marimbas, vibraphones and xylophones.

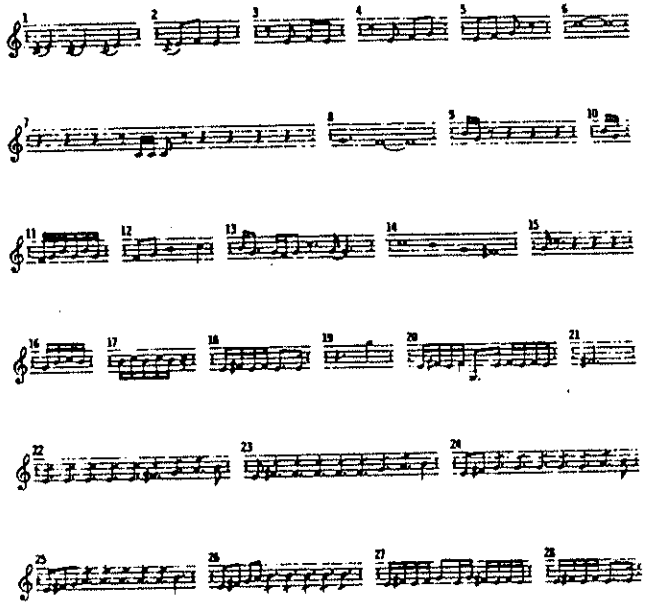
in the musical forms that were handed to me. It has a lot to do with how you concentrate on ideas and how these ideas unfold. My music doesn't jump around full of contrast from one idea to the next . . . but tries to let the thread unwind in the most organic way possible. I think more of that feeling and that way of thinking is what a lot of people need today."

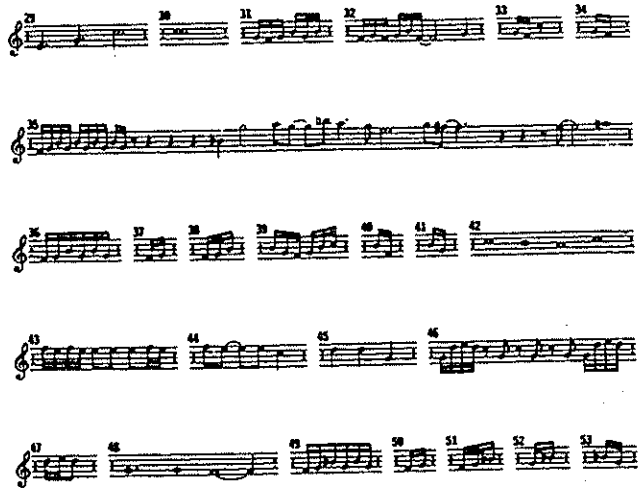
Hearing this work is very much like viewing the earth from a high-flying airplane or space shuttle. At any instant one sees a vast and complex panorama that stretches from horizon to horizon, but as the plane or shuttle moves, the panorama constantly changes as features disappear over one horizon while new ones come into view on the other. The aural effect of Riley's piece is just as fascinating as a visual effect of this sort.

Source: Score, copyright by Terry Riley, 1964. Used by permission.

Recording: Columbia MS 7178, *Terry Riley in C.*

In C **Riley**





136

ELECTRIC STRING QUARTET

George Crumb (b.1929)

Black Angels: Thirteen Images from the Dark Land, opening three sections

In an earlier commentary (no. 135) we noted the types of experimentation found in American music of the 1950s and 1960s—experimentation that pushed to the limits all earlier notions of what music was. In a work such as *Black Angels* we witness the successful integration of a number of new techniques into what could be called the mainstream of music. What strikes one immediately about Crumb's music is its broad emotional appeal, brought about in large measure by its evocative sonorities, which have been characterized as "haunting, sweet or macabre." Some result from the use of un-

BE ROBERTS

Michael Riesman in his studio. Clockwise from lower L: Roland Octapads, E-mu Emulator I atop Sequential Prophet-5, keyboard rack (top to bottom: Sequential Six-Trak, Roland JX-3P, Roland Juno-106, Yamaha DX5), synth modules (top to bottom: Roland MKS-30, Roland MKS-20 digital piano, two Yamaha FB-01s, Garfield Mini Doc), Yamaha DX7 atop E-mu Emulator II, module rack (top to bottom: Roland MKS-80 Super Jupiter, Cooper switching box, Yamaha TX816), Yamaha DX7 atop Roland MKB-300 keyboard controller, Apple Macintosh.

MICHAEL RIESMAN

KEYBOARDIST/CONDUCTOR UNDER

GLASS

MICHAEL RIESMAN

KEYBOARDIST/CONDUCTOR UNDER GLASS

By Bob Doerschuk, *Keyboard Magazine, April, '87*

Audiences at performances of the **Philip Glass Ensemble** may be surprised to find the composer not on the podium but behind his own set of keyboards, dutifully following someone else's directions. No one has hijacked the group, however, or overthrown the founder in a bloodless coup. Glass may provide the repertoire, but for direction, synthesizer programming, and all the heavy keyboard parts, he defers to the mystery conductor, Michael Riesman.

The tall, rugged-looking Riesman dominates the stage with his quiet, authoritative presence. Offstage, his contributions to the Ensemble are just as commanding. He runs rehearsals, checks out new gear, and creates all the keyboard sounds for the Ensemble from Glass's indications. He also takes samples for the group, hiring musicians to blow or bow for the Ensemble's Emulator library. The fact that he also finds the time to pursue his own composing and performance, much less submit to a Keyboard interview, is a tribute to his discipline.

There are some fundamental differences between Riesman's and Glass's music. Where the **Glass Ensemble sticks to written arrangements**, Riesman regards improvisation as the key element in his non-Glass performances. "The improvisations I do in concert have a wide stylistic range," he says. "When I was a kid, I used to improvise in the styles of Mozart, Chopin, and so on; I'd imitate the styles I knew. As I got older, I broadened my vocabulary to include jazz, pop, country, and so on. In none of these areas do I feel knowledgeable enough to say, 'I am a jazz player,' or 'I am a country player,' but I can fake the styles well enough to get by."

Yet there are al strong parallels between Glass's and Riesman's careers. Both are New Yorkers, with solid musical backgrounds; Riesman carried a double major in composition and conducting at the Mannes College of Music in New York, then pursued advanced studies in composition with Roger Sessions and Leon Kirchner at Harvard. Like Glass, Riesman considers himself primarily a composer rather than a performer, though he began taking piano lessons at age six. Perhaps the most significant interest shared by the two lies in their willingness to break out of the traditional concert format and present alternative music in the kinds of settings that many established classical artists might avoid.

"I taught for a year at the State University of New York at Purchase," Riesman recalls, "but even then I was doing solo keyboard concerts of improvised works and experimenting in different areas of performance, including playing in clubs in Greenwich Village -- the old Folk City, the Gaslight, and so on. Eventually, I decided I wanted to get out of the academic world, partly because of [composer] David Amram, whom I'd gotten to know. His attitude is that all kinds of music are legitimate. He makes an effort to integrate all the music he loves into his own work, and I decided I wanted to do that more. The music I had been writing at that time was somewhat academically oriented, but what I really enjoyed doing when I sat down at the piano was to improvise and to absorb the influence of popular idioms. This created a disparity for me, since I felt

improvisation was an important part of my talent and I wanted to make my own music more accessible."

Initially at least, Riesman has reached the public through his association with Philip Glass. They first came into contact with one another in 1974. "I gave a concert at a downtown gallery, 112 Green Street, in early 1974," Riesman says. "One of the people who camae to that concert was Dicky Landry, who was at that time the saxophone and flute player in the Glass Ensemble. Philip was looking for a keyboard player to replace Bob Pelson, who was leaving, and after hearing me, Dicky suggested my name. I had met Philip socially before, but now we got together and read through some of his music."

Like many first-time listeners to this day, Riesman had mixed feelings about Glass's music. "When I first heard about his music, I thought, 'Well, yeah,'" he shrugs. "And when I actually heard the music in concert, I had an initial reaction of, 'Well, there's nothing going on here.' But by the end of his concert, to my great surprise, I was taken with it."

As the Ensemble's longtime music director and chief keyboardist, Riesman has worked out an approach to handling the demands of Glass's style. "We don't memorize the music in the Ensemble, but it's not that different from learning, say, a piece of chamber music in the traditional way," he says. "The technical problems of fingering passages are comparable. All his notes are written out, so it's not a collaborative work in that sense.

"Other than playing the notes, my biggest job is to direct the rehearsals," he continues. "New pieces always have some kind of ensemble/coordination problem. His music is rhythmically very challenging; I would say we spend most of our rehearsal time working out the problems of multiple meters and cross-rhythms in new pieces, and making sure that everybody can stay together. When we're just starting a piece, we'll take it a little bit under tempo. I find that as we play the piece to the point where we feel comfortable with it, we usually tend to speed up somewhat above the original tempo indications."

Because Glass's work doesn't often follow conventional notions of theme, variation, and recapitulation, Riesman points out that the process of learning a new piece can be more like assembling a puzzle than following some grand developmental line. "For example," he says, "I recorded a solo piano piece, 'The Opening,' on *Glassworks*. It consists of four phrases, each of which is repeated, and then the whole thing is repeated three times. There's no other structure. Each time the cycle goes around, I play it somewhat differently, but that's not to say that the second time is the development and the third time is the recapitulation. But there's another piece I've recorded that will be released sometime later--the *Dance 2* for organ . In that one there is a sense of development, because the technique that Philip Glass uses to sustain the piece is one of increasing the complexity of the relationship between what the two hands are doing. There are rhythmic patterns which are at first a simple two against three, which then becomes elaborated into larger groupings of threes and fours and eights against sixes, and twelves against eights, that kind of thing. Melodic devices enter to compound a group of three, say, into a group of four times three, or eight times three. The excitement is in the way the rhythmic complexity continues to increase.

Seasons of Glass

The controversial composer's new work tackles pretty and pop

BY TED DROZDOWSKI Philip Glass's music came down like hellfire — or like heavenly fairydust — when his Ensemble burst into the composed-new-music scene of the late '60s and early '70s. How you heard it depended on your aesthetic compass: whether you considered the Juilliard-trained composer's variations on serial and Eastern musics, his then very new-sounding minimalism (as it was branded), the work of a jester or a genius.

Even with 30 years of career behind him, Glass can still quip, as he did when we spoke by phone from his New York City home last week, that "there are a few people who like all of my albums." But it would take a very hard case — or a hard head — to try to deny his influence or contributions at this point. He's written symphonies, operas, ballets, song cycles, film scores; he pioneered the use of synthesizers in formal music; he's recorded more than 30 albums; and more recently he's started writing pop songs for the likes of Mick Jagger, Natalie Merchant, and Suzanne Vega. And his music has become a touchstone for artists from the jazz, pop, and classical arena. Indeed, if the classical world has a composer who is himself a pop star — whose recognizability cuts through all strata of popular culture — it's Philip Glass.

His most recent efforts find Glass in a far-removed place from his early landmarks, works like the minimalist manifesto *Music in Twelve Parts* or his first multimedia collaboration with avant-garde stage master Robert Wilson, *Einstein on the Beach*. His latest symphony, *Heroes* (Point Music), establishes a beachhead for his new record label. Drawing on melodic and harmonic themes from the '70s collaborations of David Bowie and Brian Eno on the Bowie albums *Low* and *Heroes*, the symphony has a beauty that in some ways is comparable to the labors of the European Romantics of two centuries past. Glass's current interest in melody is even more richly displayed in his soundtrack to the 1996 film *The Secret Agent*. These new works became the point of embarkation for our conversation.

ERIC ANTONOW

GLASS ON GLASS: *"I seem to go through four- or five-year cycles. This is one that people like so . . . it is nice when that happens."*

Q: *To my ears, the work you're doing now is rich in melody, there are lots of interesting themes that keep resurfacing in the compositions, and on* The Secret Agent *and* Heroes *you're working with a very lush sonic palette. Where do you feel you're at creatively right now, and what's exciting you in your music?*

A: It's hard to say. I've done 30-odd CDs over the past 25 years. And they are a kind of portrait of where I am at any of those times. What I notice is that there is usually some kind of consistency within three or four CDs. But if you move beyond that you start to hear changes.

Just before *Heroes*, I did the score for *The Secret Agent*. It has the qualities you're mentioning, so I think I have grown very much into this place where I am at right now. But I seem to go through four- or five-year cycles. This is one that people like so . . . it is nice when that happens. It doesn't always happen that way. My early music could be very confrontational and demanding.

We still play that music, by the way. I'm doing a concert in London in May that will be a retrospective from 1969 to almost 25 more years. I don't mind going back and playing those old pieces, but I am really not thinking that way anymore. What you are hearing on *Heroes* and on *The Secret Agent* is pretty much what I am thinking right now.

It has a lot to do with writing for the voice. I think the main thing that's happened in what I have done in the last 20 years has been working directly with singers, in operas. I am working now on a new vocal work with Bob Wilson that is 10 songs. I have been writing a lot of songs lately. And not only on these projects, but I have done individual song projects. I wrote a song with Natalie Merchant two weeks ago. It was great — I really began to think what one should do is give up this symphony and opera business and become a songwriter. I like it a lot. So it comes out in the music you are hearing in terms of the melodic profile of the work. It's much clearer now than it was before.

Q: *How did it feel to be making such aggressive, controversial music in the '60s and '70s?*

A: I had a great time. I enjoyed it tremendously, right up through 1976. By that time my Ensemble had been together for almost eight or nine years. And the Ensemble is still working together, so I have been very fortunate to have a group of regular musicians I play with. It's been like a family and they've grown with me. That's another reason change seems very organic for me. I have no idea where I will be five years from now. I don't think about it that way.

Q: *I think of you as a very American composer, despite the way you've employed Eastern and serial techniques in your music. Maybe it was in the intensity. For me, the music that established you had very much the feel of modern American urban and industrial culture: the notes having similar values and density, the pacing and similarities of colors.*

A: I think of myself in that way too. I've thought of myself as being very much an American composer, very comfortable with the vernacular of my own environment.

But, of course, that's a very American characteristic — to incorporate and synthesize and ingest all these other cultures. We are a multiculture, so it's natural that it should come out in the art as well.

I wonder what you'll think of these songs I have been writing. A lot of things come up for people who want a title song for a film. So I did a song for Suzanne Vega for a Brazilian film, and for an English film I did a song for Mick Jagger. I wrote the whole song and he sang it. And Suzanne, I wrote her entire song as well. With Natalie Merchant, she wrote the lyrics. That was more of a collaboration. I am not really a word writer.

Q: *What was working with Jagger like?*

A: I like Mick Jagger. I went to over London. He is a very professional man in the studio. Of course, he's been doing it most of his life and one would expect that. Seeing him work, learning the song in a very methodical way and then doing different takes and trying different things — the things he liked he could reproduce perfectly, and the things he discarded he replaced. Methodically, the songs achieved something that was very much like him but really was note for note what I had written.

Q: *What's exciting about the songwriting process for you?*

A: Maybe because I have done so much of the other stuff, it's new for me. I have done four six-hour operas, and 45-minute symphonies, and things like that. It's the change of the length almost. Or changing the problem. Whatever the problem might be. I suppose if I had spent my time writing shorter pieces, I'd be writing longer pieces right now. I think it is really like that. I had done a lot of the

See **GLASS,** *page 4*

GLASS, *from page 4*

very extended time pieces, and now working in these very compact forms has piqued my interest.

Q: *I understand you're undertaking a solo concert tour right now. How often do you perform alone?*

A: I do about 20 concerts a year. I actually haven't done one in Boston in quite a while. They're easy to do because it's just myself. There is no equipment involved. I just hop on a plane and I play the piano. It does require a certain amount of practice, which — as anyone will tell you — is a big pain in the neck, but that comes with the territory.

I have been writing piano music. At the beginning I did a lot of arrangements of things apart from my own, but in the last four or five years I have been writing piano pieces. Ten years ago I really had to scratch around to get a program together. Now I have more than enough for one program and I'm working toward a whole evening, which I hope I can complete in the next year.

Q: *What else are you working on?*

A: There are so many interesting things to do. There are so many interesting collaborators. People like Bob Wilson or Allen Ginsberg. I had the opportunity to work with Bowie. His stuff is brilliant. I knew it in the late '70s; I was impressed with it then and I always thought I would one day do something with it. I am working with Martin Scorsese on a movie right now. The Dalai Lama movie, the one that the Chinese are so upset about — I am about half through that score. It's a beautiful film. I have been watching him edit and have been doing the music right alongside him. It is a very interesting project. I think people will be very taken with it.

Q: *When I first started hearing your music, I was taken by your group's name: the Philip Glass Ensemble. To me it had more of a rock-and-roll resonance than anything in the classical realm — kind of like the Jimi Hendrix Experience or the Jeff Beck Group. When you named the Ensemble, were you trying to subvert the norm of the classical world?*

A: It was the only name I could think of. I didn't really spend a lot of time thinking about it. It had the virtue of being who and what we are. We were making a distinction between ourselves and the group for new music at Princeton or the ensemble for new music at Columbia. And we were clear that we were striking out in a new direction and that was reflected in the name. I didn't think of it as an exciting name; it seemed to me fairly straightforward.

By the way, we have this concert in London coming up. The PGE — which is our shorthand for it — have been doing these cocktail operas. This new Bob Wilson score will be with the PGE. Some of the people in the Ensemble, like Michael Riesman, who co-produced *Heroes*, I have worked with 15 to 20 years. Michael also worked on *The Secret Agent* and a song on *Heroes*. When he is not conducting, he works as a music director.

BREAKING NEW GROUND: *with his Ensemble. Glass was a pioneer of the synthesizer's use in a nonexperimental group setting.*

ous composers to use things like synthesizers not as an experiment but as an equal instrumental voice within your music. What led you to do that? What was the reaction from the academic and classical community?

A: I think we were the first. I was out touring, and I really needed to have an instrument that I could tour with and that could convey a world of sound. With *La Belle et la Bête* — I don't know if you saw that when we performed it — that was a total MIDI system. We were using digital technology in the sampling and the accessing of sounds. By myself I wouldn't have been able to do it. I really needed collaborators and companions who understood the technology and were eager to use it and who brought it right into the ensemble. I think the academics were horrified, as you can imagine.

The funny thing is that now it turns out you can for just three or four thousand dollars buy a sampler that can do the stuff that expensive equipment used to do. It's changed dramatically the way people make music today. When I was a kid, synthesized music was only at the universities and made by huge equipment that was completely not portable and you had to sign up for time to work on it. Now, it's completely available. My son is building a home studio. For $2500 he bought an eight-track recorder, a sampler; he's setting up in the basement. Ten or 15 years ago that was unimaginable.

What that means is that this technology is available for young people. And it also means, talking about the academic world, they've had to completely retool. A lot of these places have had to find people who can teach; the younger voices want to know about sampling, they want to know about MIDI systems. They want to know about the kind of software that makes this useful and available. It's kind of a wake-up call to the schools that they have to catch up with the rest of the world. The music world will of course develop without them. I've noticed that some of the universities where they've had studios with electronic music are completely outdated now.

But you know, places like particular place makes a point of being current. Because they have to. The people that are coming out of there are going right into music; they're not graduating music teachers, they are graduating people to go into the music world in one way or other. It's a very practical approach and it has its virtues. As a practical musician myself, that is something I am sympathetic to. Of course, an academic background has its qualities too. I realize that to have a deep training in traditional music is viable, so I don't think we can set that aside so easily.

Q: *As a young, rogue composer you bucked the establishment. Was there a point in your career when you realized that you'd become part of the establishment yourself?*

A: There are several generations of composers who have come along after me, so I can hardly be an upstart anymore. But take *Heroes*, for example. Very few orchestras will play the piece, because they consider . . . What I heard from the orchestra managers is, "We don't play rock and roll."

Q: *But it isn't rock and roll.*

A: They never looked at the music. They simply saw the name David Bowie and turned against it. There are a lot of places that will play other works of mine but will not play anything that seems to have that kind of influence. But in terms of the mainstream, I am not worried about finding places to play. I am not worried about having projects to do. I can be supported now within the world of music and by my music. That has given me a tremendous independence from the academic world.

Q: *Meeting Ravi Shankar in the '60s really changed your life and the way you thought about music, didn't it?*

A: It did. I met him at a special time. I was young enough and still impressionable enough, so that

Q: *Are you still in touch with him?*

A: Yes, I am. I did a record with him not too many years ago called *Passages*, on a small label called Private Music. And we were talking about performing it live. We've been invited to do that in Mexico City next year. Ravi is playing beautifully, but he is getting older. I think if you have a chance to hear him you better hear him now.

Q: Heroes *is on a label you're running, I understand, under the aegis of the major label PolyGram.*

A: I was looking for a record to start off with that would say something about what Point Music was going to be about. One of the things we do is present experimental music and kind of classical avant-garde music, like Gavin Bryars. And world-music projects like Foday Susso. But I am also interested in this funny in-between world of popular music and experimental music that David Bowie and Brian Eno have been very active in. So I thought this was a way of announcing what the character of Point was going to be. It was important to define for PolyGram what we were trying to do, because I announced that this was kind of a new classical music. That was my intention. Good music can appear anywhere. It can appear in techno, it can appear in classical, it can appear in popular music. My point is that quality is not a monopoly by any particular group of people.

Q: *You seem to be stimulated by having a lot of contexts for your music.*

A: Well, *Heroes*, for example . . . It is important to note that *Heroes* has been a ballet with Twyla Tharp. She was touring last year with it. *Heroes* is kind of half-symphony, half-ballet.

I like the collaborative aspect of theater; you can bring in literature and image and movement. And with that comes these creators, writers and designers and choreographers and actors and singers. I like the community that develops around theater work — the community of people and the community of ideas.

I try to work with young people on Point Music. I was just in Europe and came across the whole generation of techno-pop people in England that are interesting. I still listen a lot to Indian music. And of course my own tradition is classical and so I listen to that as well. I listen to everything, really. For me . . . the Grammys were last night; I knew all the music that was on at the Grammys. That's all interesting to me. I don't draw a line around myself that I won't cross. It doesn't mean I like everything, but I hear it.

Q: *What do you have on the front burner right now?*

A: There is a new opera that is opening in Germany in the spring. There's the film with Martin Scorsese that I mentioned. There's the new piece with Bob Wilson; that's completed. I would like to finish my cycle for piano. That's enough for now.

Q: *You turned 60 last month. Did any revelations or imperatives comes with that birthday?*

A: One thing I realized is that we think of age very differently today. Sixty is not the end of a career anymore, as it might have been some years ago. People expect to be very active for a long time. I think of myself still at the beginning of certain things I want to complete. But I'm also still thinking of inventing new language and new ideas.

FYI

Here's a complete discography of Philip Glass's previous albums on CD. For a crash course in his essential work, try the asterisked CDs.

- *Akhnaten* (Sony)
- *Anima Mundi* (Elektra/Nonesuch)
- *La Belle et la Bête* (Nonesuch)
- *Dance Nos. 1-5* (Sony)
- *Dancepieces* (Sony)*
- *Einstein on the Beach* (Elektra/Nonesuch)*
- *Essential Philip Glass* (Sony)
- *Glass Organ Works* (Catalyst)*
- *Glassworks* (Sony)*
- *Hydrogen Jukebox* (Elektra/Nonesuch)
- *Itaipu — The Canyon* (Sony)
- *Koyaanisqatsi* (Antilles/Island)*
- *Kronos Quartet* (Elektra/Nonesuch)*
- *Kronos Quartet Performs* (Nonesuch)
- *Low Symphony* (Point Music)
- *Mishima* (Elektra/Nonesuch)
- *Music in Twelve Parts* (Virgin/Venture)*
- *Music with Changing Parts* (Elektra/Nonesuch)
- *North Star* (Virgin)
- *1000 Airplanes on the Roof* (Virgin)
- *Passages* (Private Music)*
- *The Photographer* (Sony)
- *Platinum* (Carol)
- *Powaqqatsi* (Elektra/Nonesuch)
- *Satyagraha* (Sony)
- *The Screens* (Point Music)
- *Solo Piano* (Sony)
- *Songs from Liquid Days* (Sony)*
- *Songs from the Trilogy* (Sony)*
- *The Thin Blue Line* (Elektra/Nonesuch)
- *Two Pages/Contrary* (Elektra/Nonesuch)
- *Violin Concerto* (Deutsche Grammophon)

(1)

30'S

Jon Gibson

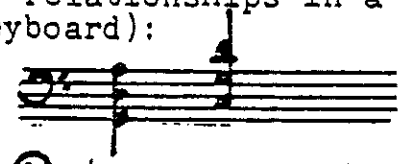
RHYTHMIC ANTHOLOGY

For any number of performers.

Each performer has two pitches, timbres, chords or sonorities.

Percussion instruments, such as drums, cymbals, wood blocks and marimbas play the score as written - that is, rhythmically, or at times just the first quaver of a tied grouping (the notes marked with ✕) may be played.

Sustaining instruments, such as organs and winds, also play as written, or may play the notes of a particular tied grouping as one note. For instance in section (6) the grouping may be played as dotted minims (𝅗𝅥.) instead of six separated quavers (♪♪♪♪♪♪). In addition with keyboard instruments each hand may play of chord rather than a single pitch, and more than one performer may play at one keyboard.
If chords are used their notes should be chosen with discretion. Octaves, perfect fifths and fourths should predominate. Dissonant relationships become irritating to the ears very quickly in this piece so that a generally sonorous, consonant sound, utilising voicings within a particular scale or tonality, is recommended.
Here is one possible sustained low keyboard part. (These notes can be repeated in other relationships in a higher part by another performer on the same keyboard):



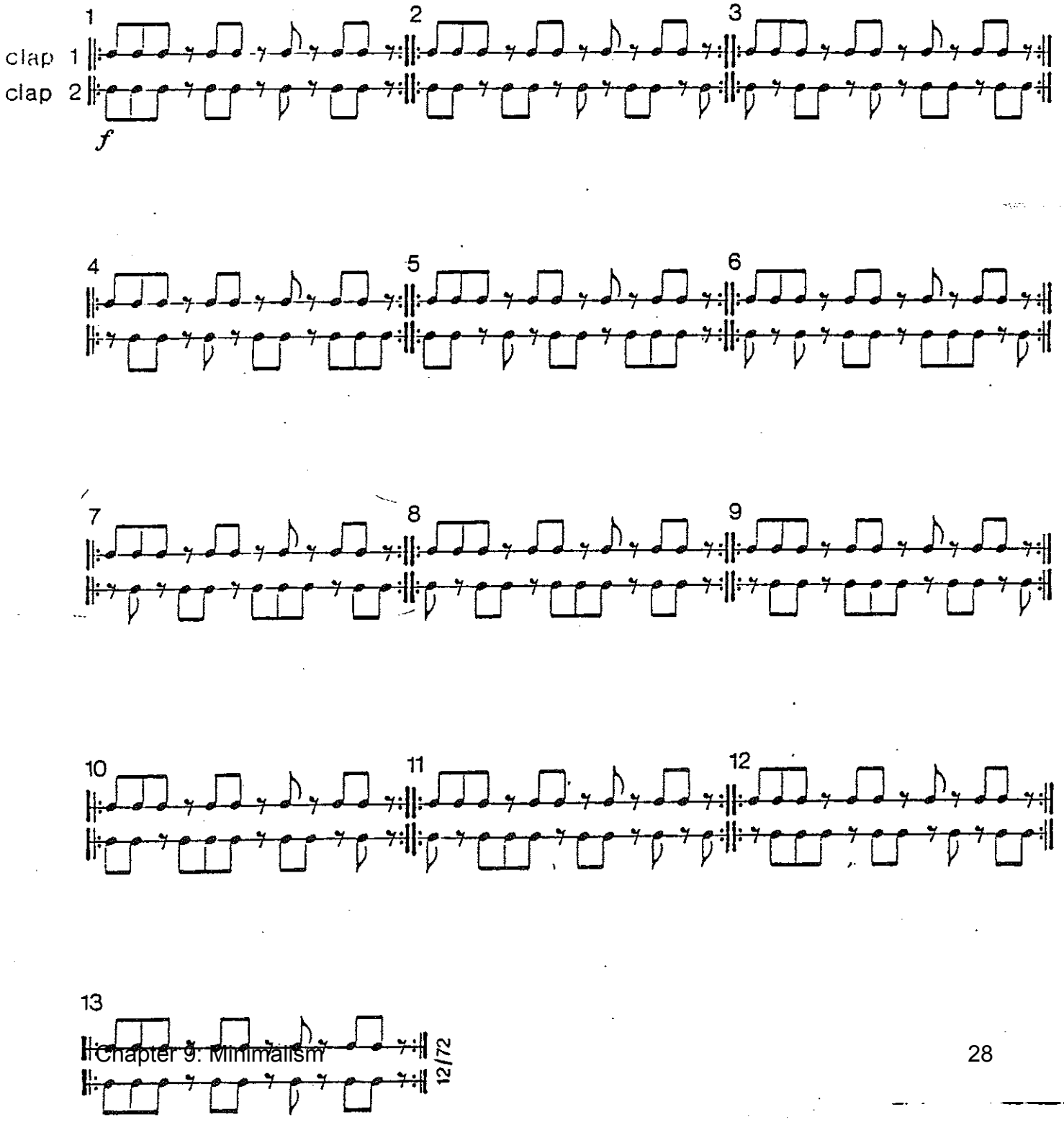
All performers start at (1) (not necessarily all at once) and repeat it until they wish to go on to (2), (3), etc., successively down the page.
Sections should not be changed by everyone at once. One performer can still be on (1) while other performers are on (2), (3), (5), (6) and even (30).
However it is necessary to stay together in the sense that everyone must always play the last two beats (the semiquaver figure) at the same time at all times.
As the piece progresses it is possible to skip section or go back to previous sections and replay them, bearing in mind, however, that in general the various juxtapositions should be repeated enough times to be reasonably heard and appreciated.
Proceed at a leisurely pace, taking your time with each section. The piece can last for any length of time from twenty minutes to an hour or so - perhaps longer.
When all performers have reached (30) and repeated it to their satisfaction, the piece should end abruptly (on cue) at the thirty-second beat of the cycle (the semiquaver figure).

Explore other ways of performing the piece.

The number of repeats is fixed at 12 repeats per bar. The duration of the piece should be approximately 5 minutes. The second performer should keep his or her downbeat where it is written, on the first beat of each measure and not on the first beat of the group of three claps, so that the downbeat always falls on a new beat of the unchanging pattern. No other accents should be made. It is for this reason that a time signature of 6/4 or 12/8 is not given – to avoid metrical accents. To begin the piece one player may set the tempo by counting quietly; "one, two, three, four, five, six".

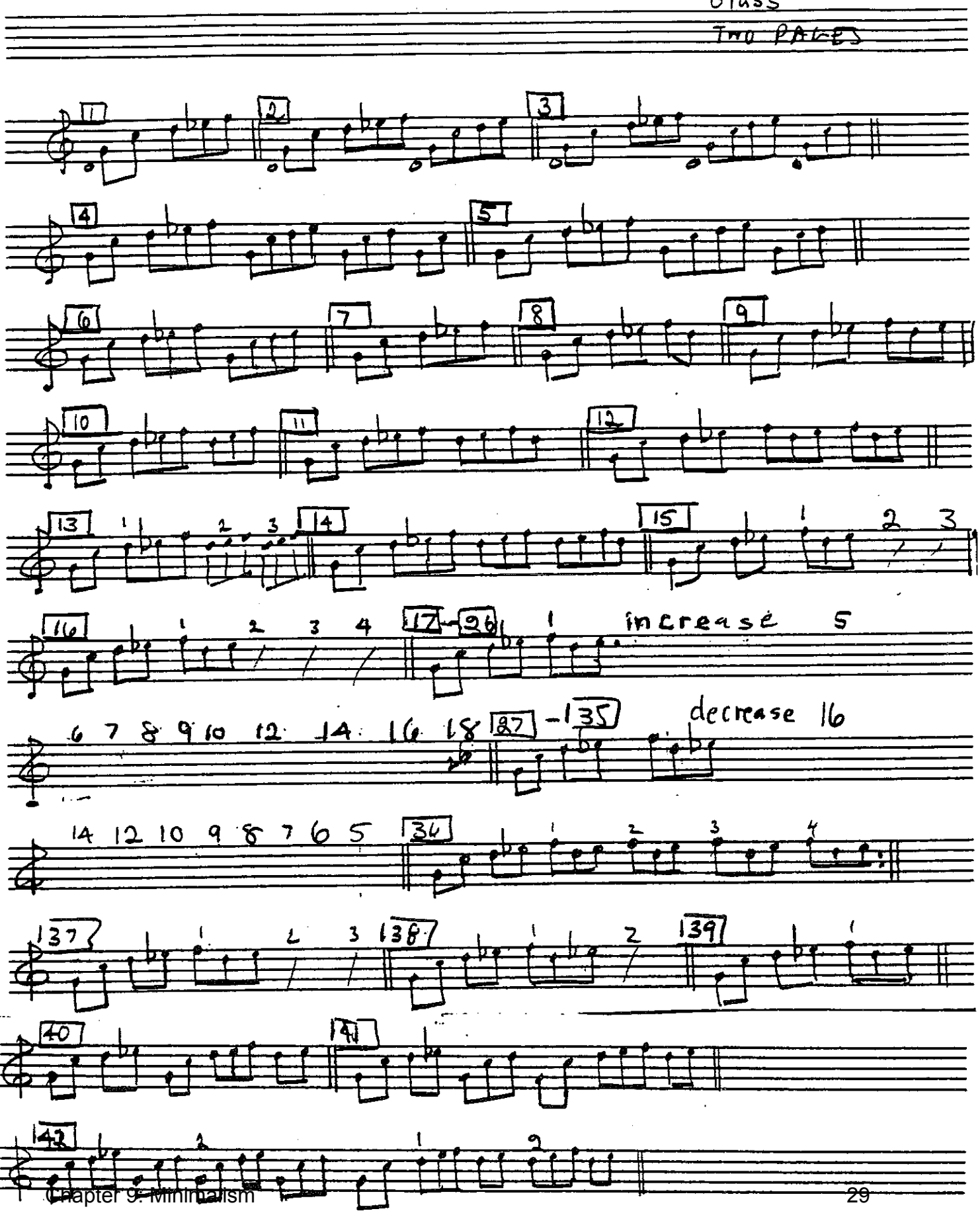
The choice of a particular clapping sound, i.e. with cupped or flat hands, is left up to the performers. Whichever timbre is chosen, both performers should try and get the same one so that their two parts will blend to produce one overall resulting pattern.

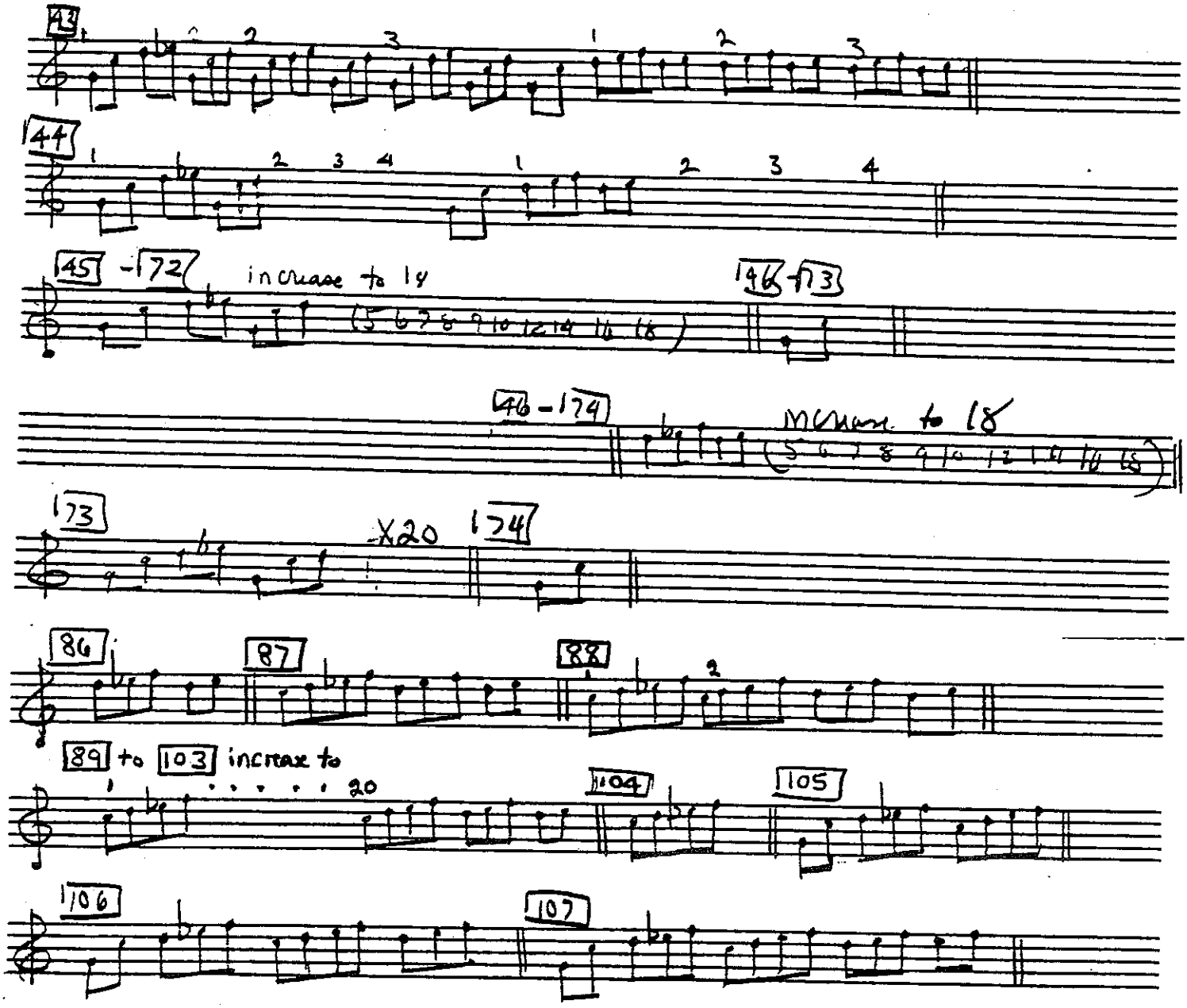
♩ = 160-184 Repeat each bar 12 times/Répétez chaque mesure 12 fois/Jeden takt zwölfmal wiederholen



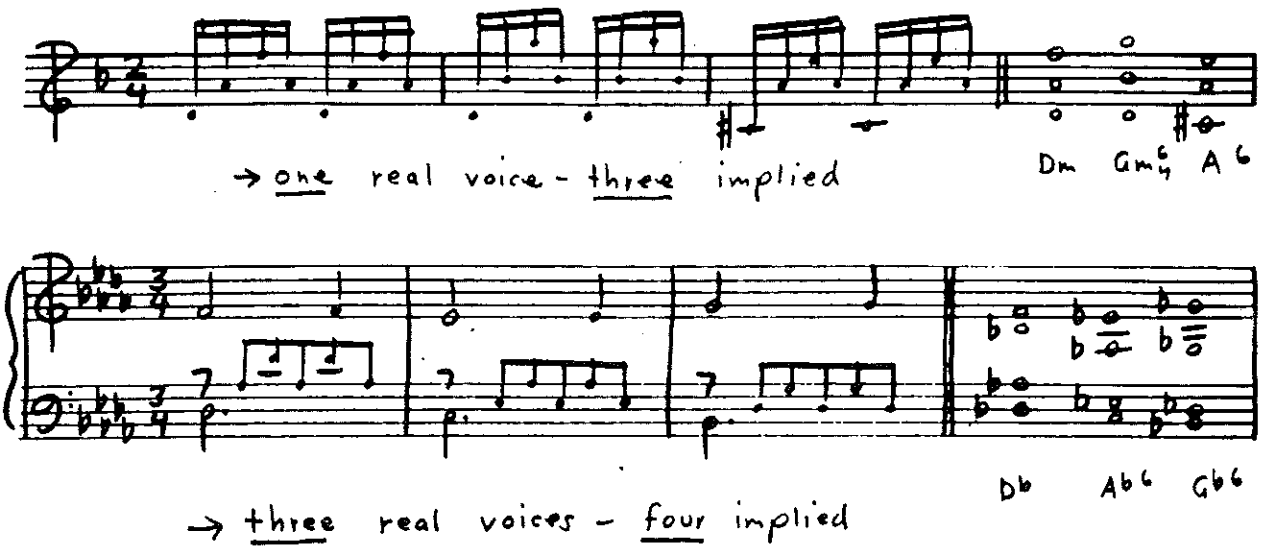
Will Merton's book has 1st + last 8 measures
This is Hoffmann's #3.

Glass
TWO PAGES




43
44
45 - 172
increase to 14
146 - 173
46 - 174
increase to 18
173
X20
174
86
87
88
89 to 103 increase to
20
104
105
106
107

75A

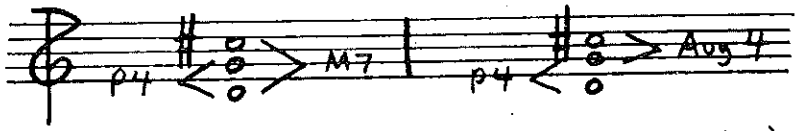


Only a few general points have been touched on here pertaining to the textural settings of triads in 2, 3, and 4 parts. These matters will be expanded in the sections dealing with spatial problems of tonal distribution in a composition and voice-leading.

SUPPLEMENTARY READING PMNSDT

Although the great majority of Western harmonic procedures have been based on tertian triads, the possibility of constructing consistent tonal systems upon other than three-tone combinations exists, and indeed some of these have been explored, especially by composers in the twentieth century. Some other means of analyzing non-tertian triads is imperative in dealing with works of this nature.

Triads may be thought of as a combination of two intervals, either as both built on one tone or as one interval imposed on the other.

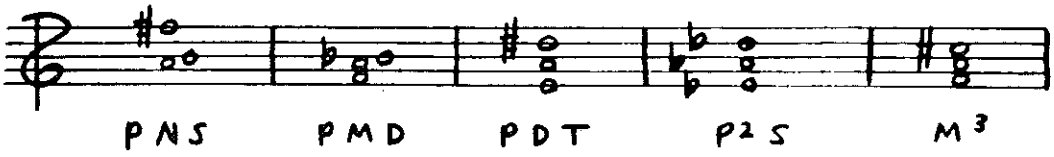


Triad contains P4 (P), M7 (D), and Aug 4 (T).

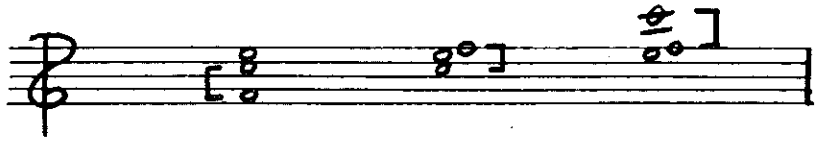
As the above example illustrates, each triad consists of three intervallic relations. One useful way of classifying the various families of triads is by indicating the various intervals present in each chord with Hanson's system of denoting intervallic sounds (review page 33). By employing this terminology there will always be three diad sounds in each

P M N S D T
P4 Ma3 mi3 Ma2 mi2 76 tritone
P5 mi6 Ma6 mi7 Ma7 (A4 d5)

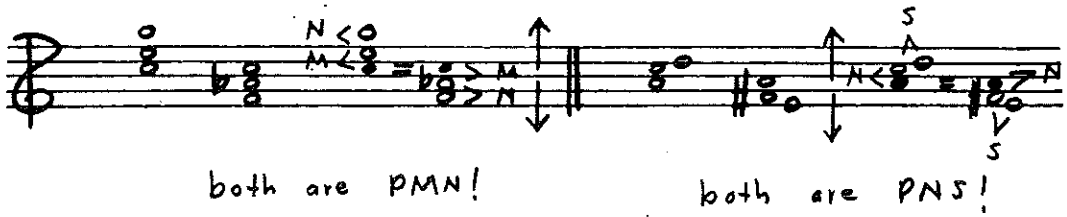
triad; in some cases they will all be different or, as in the last two cases in the example below, there may be several of the same type. The various diads of a chord are usually listed in the following order: P M N S D T. If there is more than one of a certain interval type, the number is written as an exponent to the right of the letter (P^2, N^3, etc.).



Non-tertian triads are also subject to various spatial arrangements (or "inversions," if you will). Bear in mind that the "inverting" of these sounds may change the aural quality in a most striking manner. It is not as easy as in tertian triads to determine which form of these sounds is the "root position." One method is to take the root of the strongest harmonic interval in the triad (usually a P5, P4, or M3). In some cases, this may, however, be in disagreement with our aural perception, probably due to the training gained from habitual aural experiences and the insertion of implied intervals. Below is a non-tertian triad P M D, with its various "inversions"; the root here is probably F (due to the P5).



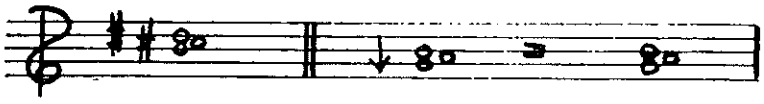
Triads of apparently different type may be shown to contain the same intervallic content by means of involution or mirroring (literally turning the triad upside down).



It is possible to change the pitch content of a triad by three means without changing its intervallic content: by transposition (raising or lowering all of the chord members by the same intervallic distance), inversion (different chord members in the bass), and involution (or chord mirroring).

All are still PMD sounds!

Including the possibilities of triad inversion, involution, and transposition, there are twelve basic types of triads, using Hanson's method of chord analysis. Those with two or more intervals of the same type will mirror into a transposition of the basic chord.

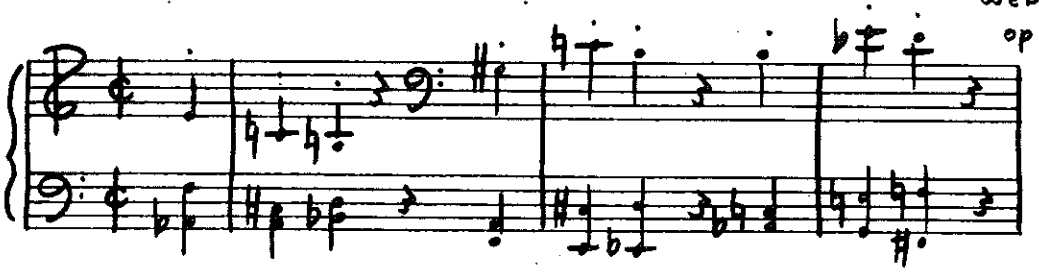


MS² mirror is same as transposition to G

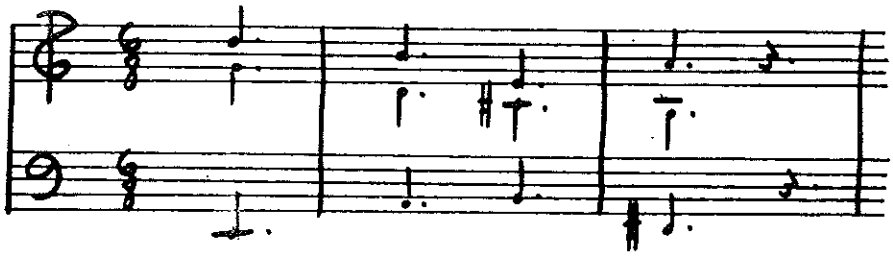
Listed on the following page is a chart of the twelve triadic possibilities, with Hanson analysis, rearrangements or "inversions," involution (if possible), and most likely root tones.

Illustrated below are two examples of passages employing non-tertian triads as the basic sonorities in the harmonic structure.

Webern: Concerto op. 24 (3rd mov.)

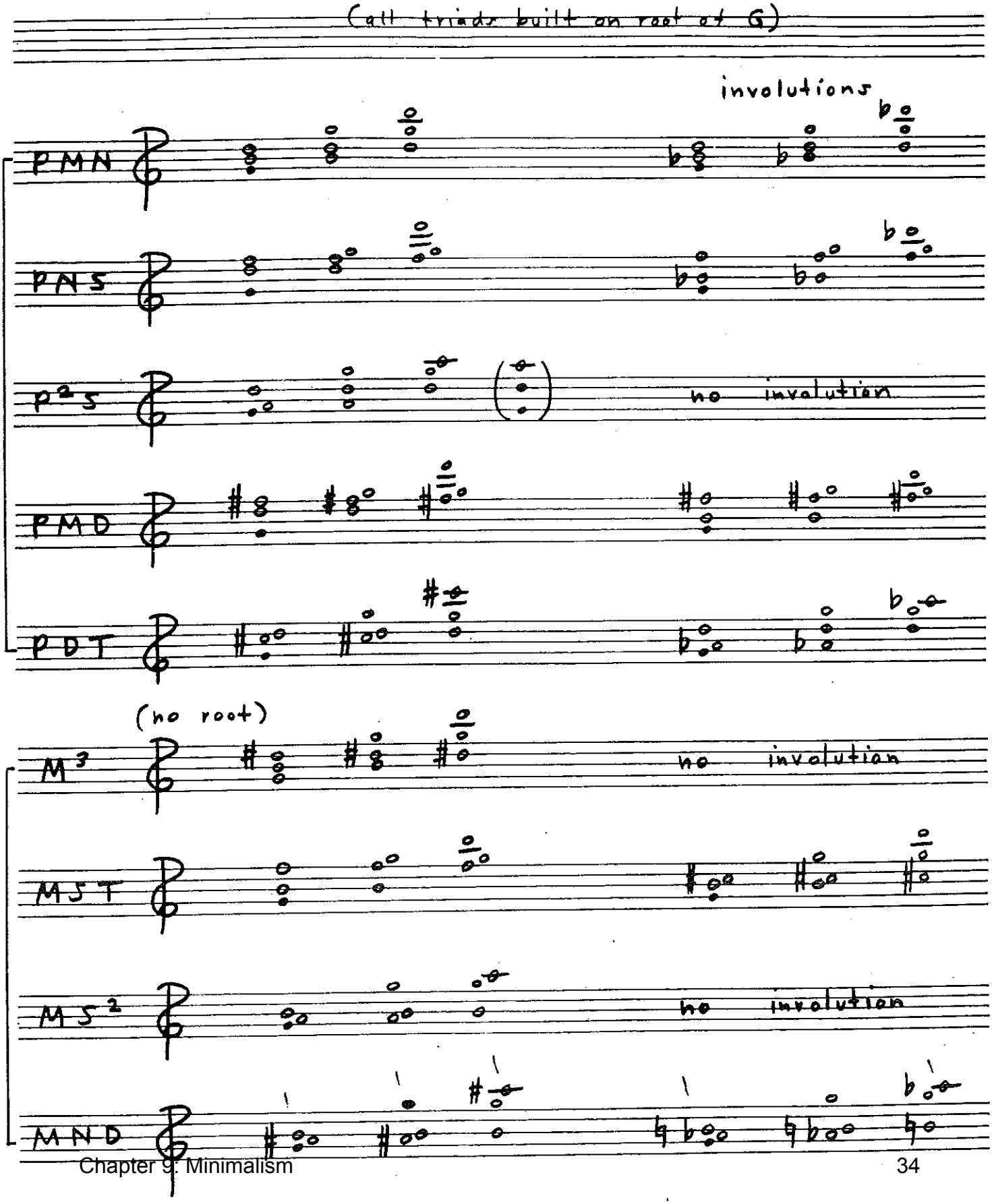


All are MND!

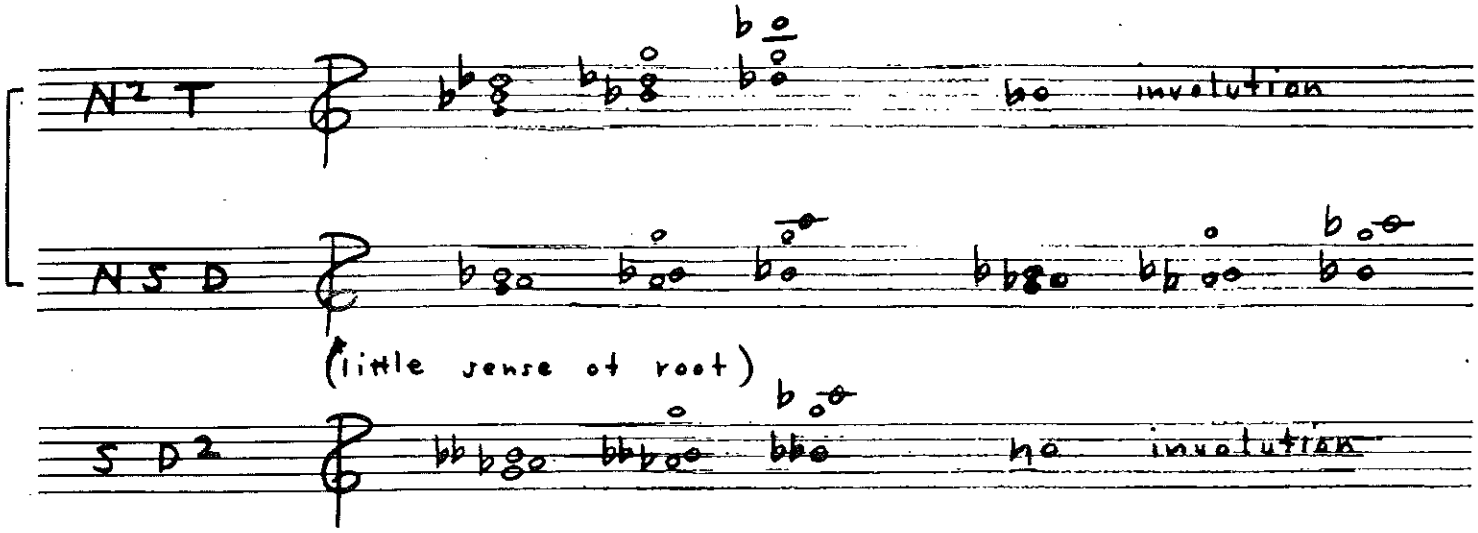
Hindemith: Ludus Tonalis, Fugue 4.

All are PNS!

78

Twelve Triad Types

classified according to Hanson analysis, including "inversions" and involution

79

Triad Types (cont.)



On Philip Glass and Minimalism

Keyboard Magazine, April, '87

Almost never do the imitators approach the levels of complexity attained by Philip Glass, but the lesson is the same: ***PROPULSION THROUGH REPETITION OF STRICTLY LIMITED RESOURCES.*** Or more accurately in the case of Glass, **propulsion through the *illusion* of repetition.**

Those whose music defined minimalism were not as dedicated to rhythmic puzzlework as Philip Glass. Of course their influences were there, particularly in the case of Steve Reich, who played in Glass's original Ensemble. But so were crucial differences. LaMonte Young's contribution to the *Anthology of Chance Operations* in 1963 consisted of a single line drawn on one index card. As a visual representation, Young's drawing reflected the essence of proto-minimallism. But one listening to, for example, Glass's *Songs from Liquid Days* demonstrates how little Young's Zen symbolism has to do with the dynamic activity of Glass's work.

Constantly, without ceasing, there is motion in the music of Philip Glass. Even when built along simple harmonies and resolutions, it bustles like a community of bees, whose restless circular dances intersect and unify to create single movement, the movement of the hive. Yet, from afar, the hive appears still, the myriad sounds emanating from it fused into a single hum. This same principle--**movement and stillness, many elements locked into one**--underlies Glass's work.

Since putting his Ensemble together in the late '60's, Glass has used keyboards as a rhythmic and textural building block. Beginning with electric organs and graduated not to digital synthesizers and samplers, ***he wove polyrhythmic tapestries--intricate, shimmering with activity, yet strangely still in the sense of not building, elaborating, climaxing, or resolving in the traditional European classical sense.*** **His keyboardists had to develop a new set of performance skills to cope with the unfamiliar modes of teamwork the music required. No thundering crescendos, no spiraling runs up and down the keyboard, no shades of Liszt or Chopin. Instead, the player had to learn impeccable finger control, hand independence, concentration, and plain old endurance.**

Whether Glass's solo keyboard pieces--"The Opening" from *Glassworks,* "The Lighting of the Torch" from *The Olympians,* and the current piece *Mad Rush*--or keyboard parts in such larger works as the opera *Satyagraha* and the choral piece *Requiem* will have a lingering impact on performance technique, his music as a whole is making an impact on the public that grows from year to year. It fills the Metropolitan Opera House as well as the Peppermint Lounge. It draws culture vultures face to face with mountains of speakers and stacks of synthesizers in high-voltage Ensemble recitals. It wins Philip Glass recognition from *High Fidelity* as Musician of the Year, as well as guest spot on *Saturday Night Live.*

This remarkable composer/performer was born in 1937 in Baltimore. As a teenager he worked in his father's record store and studied flute at the Peabody Conservatory. Though he showed talent, there was little indication of the style he would create in years to come, unless one had the foresight to examine young Philip's interest in arithmetic. Now, however, Glass waves off any suggestion that he showed prodigious mathematical gifts.

"After all," he laughs, "*Einstein On the Beach* has counting in it, but it's only counting up to eight, so it doesn't take a lot of higher math to figure out cyclic music. It takes arithmetic to figure out how many measures of 5/8 will fit into how many measures of 7/8. All you do is multiply 5 by 7. But I had a great interest in science, and Einstein in particular. And I did chess. I was a superficially kind of smart kid, in a way."

Glass had enough superficial smarts to get into the University of Chicago at the age of 15. He earned his M.S. from the Juilliard School of Music in 1962; 75 of his compositions were performed in concert before he had graduated. Subsequently he composed on a Ford Foundation Grant in Pittsburgh, then studied in Paris with Nadia Boulanger, in India with Ravi Shankar and Alla Rakha, and in Morocco, where he absorbed North African rhythms and melodic repetition.

In 1967 Glass returned to New York and began trying to piece the jumble of musics he had heard into a workable symbiosis. It was at this time that the Philip Glass Ensemble was born, a collection of young players devoted to the music of its founder. From the start electric or electronic keyboards were the kernel of the group's sound. Even the woodwind parts conceived by Glass usually doubled the flutterings and **drones** laid down by the keyboard players.

For all the mechanistic discipline of the emerging Glass style, the Ensemble's music could be--for those who were willing to listen--overwhelmingly emotional. Animated by the power of Eastern traditions, it opposed the academic aspect of the post-Schoenberg avant-garde. "We rejected the idea of non-tonal music, of aleatoric music, the entire idea that music had to be an intellectual enterprise."

Over the next few years, Glass and his group built a reputation in New York's underground art world that eventually spilled out of the lofts and studios of lower Manhattan into the concert halls uptown. Along the way, the Ensemble picked up several crucial members. Sound technician Kurt Munkacsi joined in 1971, bringing with him an expertise that polished the group's stage sound to a dazzling sheen. And, in '74, the year that Parts 1 and 2 of Glass's monumental *Music in 12 Parts* were released, Michael Riesman came aboard as an organist. Today he is Glass's first-call interpreter of keyboard works, as well as music director of the Ensemble.

Since the triumphant opening of the opera *Einstein on the Beach* in 1976, Philip Glass has been one of the most widely discussed composers of our time. Because of the marathon length of *Einstein*, which runs for five hours, and *Music In 12 Parts,* casual observers tended to stereotype him as a specialist in works of monumental dimensions (a monu-minimalist?). Many of his most acclaimed pieces are certainly large-scale, such as the operas *Akhnaten, Satyagraha,* and *The Making of the Representative of Planet 8*, based on a Doris Lessing novel and premiering in January '88 by the Houston Grand Opera. But much of his work is fairly small in scale, though none of the latter has created as much of a stir as his 1986 release, *Songs for Liquid Days.* One reason for the success of *Songs* is the abundance of pop talent on the album. Glass composed the music to lyrics written for the project by David Byrne of Talking Heads, Paul Simon, Laurie Anderson, and Suzanne Vega, while the singers recruited for the session included Linda Ronstadt, the Roches, and Janice Pendarvis. Add to these ingredients the high-voltage accompaniment of the Glass Ensemble and additional winds and strings, and you have a recipe for success, commercial as well as artistic.

Which brings us to San Francisco. The night before our interview, Glass and company performed the dance piece *A Descent into the Maelstrom*, an excerpt from the opera *The CIVIL warS,* and the complete *Songs* before a typically mixed audience at Louise M. Davies Symphony Hall. One had the feeling that many of the season subscribers hadn't really grasped what they were in for. If there had been rafters at Davies, they would have been ringing with the gale force of *Maelstrom,* the opening piece. As the last mighty synthesized strains died away, in the silence before the applause began, one stunned voice called out a facetious suggestion: "Louder!"

We began the following morning by asking Glass about the *Songs,* and what they represent in his evolving style as a composer and performer.

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Q: The second part of your *Songs* concert was presented with a larger ensemble onstage than the first part. How does the size of the group affect your approach to playing and programming your keyboards?

PG: Well, I knew I was working with acoustic instruments too--brass, strings, and so forth. One of the things I've been very interested in doing has been to combine synthesizers and acoustic instruments--kind of reorchestration of the orchestra through synthesizers. It's something that's very specific to the way Michael Riesman and [producer] Kurt Munkacsi have put down the score. Even when I was very explicit, there was almost always a keyboard part, and that part is a specific programmed synthesizer part. We have about eight or nine synthesizers in the ensemble. There's what you see onstage, and a number of other things that are rack mounted but that you don't see. I daresay that there are over a hundred programs in use at any one of our concerts. On my two keyboards I use about 30 or 40 in the course of a single concert.

Q: You've written a number of operas, yet only one--*Einstein on the Beach*--included a part for your Ensemble. Why did you not include the Ensemble in *Akhnaten, Satyagraha, The Juniper Tree, The Representative,* or *The CIVIL warS*?

PG: Well, I made transcriptions of the operas for the Ensemble, but I tend not to write parts for the Ensemble in the operas because that limits its availability for opera houses.

Q: Yet in *Satyagraha,* for example, there were some passages that sounded as if they were being performed by your Ensemble.

PG: Yes, that's right. That was the first piece I had written not for the Ensemble in many years. I was looking for, let's say, a model of orchestral writing to use, and I decided to use the Ensemble, since that's what I had been working with for so long. It was, in fact, my intention to make the orchestra sound like the Ensemble, which is actually rather curious. But it seemed to me that I couldn't do any better than to work with my own sound, and find an expression for it within the more or less traditional orchestra. By the way, that's one reason why there weren't any brass in that piece.

Q: Perhaps the most obvious example of emulating your own Ensemble in *Satyagraha* comes in "the Vow," Act I, Scene 3, where you have a fast wind instrument pattern running separately from the orchestral strings.

PG: Yes, that's right. It's a hard piece to play for people who aren't Ensemble members. There's quite a bit of overdubbing there. When Michael Riesman, Kurt Munkacsi, and I work together, I don't like to play any games requiring me to stay with the original instrumentation. See, the recording is an idealized situation. After all, you don't have the sets and the dramatic action to go by, so I feel that to compensate for the loss of some of the elements, one can bring the recording itself to a very high level of performance. Or, put it the other way: If you were to see a live performance of the piece, the orchestra wouldn't play it as well, but you might not mind. You'd be attentive to a number of other factors, like the staging and the lighting and the costumes. You might not notice that the flutes are taking breaths and the oboes can't keep up with it and the basses are falling behind--the kind of things that are normal.

Q: When you take a piece like this to an opera company, is it difficult to break in the resident keyboardist for the kind of parts you write?

PG: I have written keyboard parts for a number of pieces, but they're really synthesizer parts. *Satyagraha* is one. *The Juniper Tree* is another, and *Akhnaten* uses keyboards. So I've been in the situation of coming to orchestras, and I've found that every time I've done this, the orchestra has provided a keyboard player who says to me, "Oh, by the way, I play the synthesizer. Would you like me to do the programs?" Can you believe that? Now, these are all guys or women in their 30s. I usually call for a synthesizer that you could find anywhere. Bu I find that these auxiliary keyboard players that orchestras keep around are into synthesizers! The kind of person who will be a keyboard player with an orchestra is going to be a practical musician. We're

not talking about recitalists and concerto players; we're talking about people who make their living playing all manner of music in all manner of situations. And these people are anxious to equip themselves for the world of contemporary music. By that I don't mean the arcane world of serial music; I mean the contemporary music we play and live with.

Q: Is it difficult, though, to prepare these keyboardists for the particular demands of your kind of music?

PG: It's not like it used to be. It's not so hard anymore. One important factor in that is that if people haven't played my music, they've still heard it. People don't say, "How is it supposed to sound?" Generally speaking, they know how it's supposed to sound because either they've heard the records or they've heard us play. Maybe they've seen us on *Saturday Night Live*, for God's sake. I don't mean to be immodest about this, but it would be really hard to find a professional musician who didn't know anything about it at this point. So there's that familiarity, and there's also a real willingness on the part of the player to do it. Now, that's a very important factor. It's not like, "This is a drag. I have to play this, and it's impossible. What do I have to do this for?" The attitude I'm getting is, "Oh, I'm finally getting a chance to play this music." That's how I would characterize it.

Q: Traditionally, young pianists aspire to be the next Horowitz. Do you find that today's keyboard players are not as universally fixated on building a concert recital career?

PG: Well, I suspect you still have that aspiration. You still have a steady crop of people heading for the recital stage. It's a hard, hard business, and I don't envy anyone who sets his or her goal in that direction, because it's so competitive. Except for the handful of people who do succeed at it, it can't be so rewarding. What really happens, of course, is that people who stay on as practical playing musicians begin to play a lot of other music, because that's how you make a living. If your predilection is toward new music, you might begin playing with some of the new music ensembles, which is another way to function as a pianist. It's very demanding, and it takes a lot of technique. You have to really be a good musician to play Elliott Carter, or a piece of mine, or whomever. But those are the kind of players you're most likely to run into.

Q: That reflects an important change in the business. Twenty years ago your choices were perhaps more limited; if you wanted to stay in music you were either a concert recitalist or a teacher.

PG: I think that's true. There is another option now. My generation as a whole can probably take credit for that. We were the generation of composers who decided we wanted to play our own music. Whether it was the Sonic Arts Union, which was people like Gordon Mumma and David Birnbaum, or people like Richard Teitelbaum and Frederic Rzewski, or of course Terry Riley, Jon Gibson.... I mean, there's a very big list of people, people about my age, who were not willing to wait for others to play our music, so we got involved with performance. What we're finding now, in the late '80s, is that there's a public for this music. In New York it centers around the Next Wave festival, and Merkin Hall, and the Kitchen, and Roulette; we all know where those places are. There's an active life in the new music world. It's not about sitting around in a school and sending your string quartet to somebody in another school and hoping they'll play it, and then you'll play their string quartet. It's more about playing your music and playing somebody else's music. It's attracted a new kind of performer and definitely a new kind of audience. We have a much more interesting music world now than when I was coming out of music school.

Q: You mentioned that many of today's young orchestra keyboardists are familiar with synthesizers. When did this become apparent to you?

PG: It's been a recent discovery. I'm talking about the last three years. The very first encounter I had with orchestral keyboard players was in Europe, but there it was not true. The European players were behind us in that sense. I don't mean to be a jingoist about this, but generally speaking American players are better trained and more on top of the scene than European ones are. I think that's because a lot of our players tend to work in a wide variety of

styles, whether it's concert music, sessions of various kinds, or different kinds of commercial music.

Q: You characterize the keyboard parts in these particular works as synthesizer parts specifically. Yet they are really pretty straightforward and keyboard-oriented, without a lot of electronic effects.

PG: Oh, no, of course not. In a way that makes it simpler, but it also focuses a problem very clearly for us. I think that the people I work with and I are on the very forefront of people who combine electronic and acoustic instruments. This is, to me, the most interesting area. For example, we're recording the opera *Akhnaten* now, starting off with the Stuttgart Opera Orchestra, but by the time we get done there will be tons of overdubs on it. We're really learning how to extend and enhance the acoustic instruments with electronic means. But the function of the keyboard in these pieces is to fill out the wind playing. I've gotten into the habit of writing very difficulty wind parts for my own players, who can do it--someone like [saxophonist] Jon Gibson, who practices circular breathing. Here's a guy who can sit and play for literally ten minutes without stopping. Now, with orchestras, that's simply not going to be true. I write for a lot of parts sharing: Flutes 1 and 2 share a part. But even so, I found in some of those pieces where I was still writing more similarly to the Ensemble writing that it was a good idea to back up the parts with a keyboard. In those cases I programmed the keyboards to sound like the woodwinds. It was just a synthetic way of covering very difficulty playing. In the more recent music, that's not necessary. Since 1978, when I did *Satyagraha*, I've tended to write rather differently for the orchestra. It's not as much like the Ensemble as it used to be.

Q: You're not interested in exploring electronic sounds too far beyond your present range, then?

PG: **I'm not interested in exotic and funny weird wounds. To me, that seems like an endless avenue; once you start on it, there's no telling where in the world it might lead.** Maybe it's partly a generation thing too. I'm a pencil-and-paper composer. That's how I was taught to write music, and **it's easier for me to conceptualize with a paper and pencil than it is with a machine.**

Q: Do you feel a piece of music is less successful if listeners notice the sound of the instruments more than the music itself?

PG: Well, I don't know. Varèse was very much involved with sound, and so was Charles Ives in a way. I don't think we can roll that out. But there are cul-de-sacs in music, and that could be one. Writing good counterpoint is a cul-de-sac too, if you get too caught up with it.

Q: But has your writing of keyboard parts specifically changed since the days you were using organs instead of synthesizers? Your synthesized parts seem functionally very similar to what you used to write for the organ.

PG: That's true in those pieces, but there are a number of solo keyboard pieces where that isn't true. I'm thinking of two dance pieces for organ, *Dance 2* and *Dance 4*. There's a piano piece called *Mad Rush*. Then there's "The Opening" to *Glassworks,* which is a solo piano piece. The piano pieces tend to be polymetric. You have to play one meter against another meter, twos against threes, something like that. That's quite different from the Ensemble writing, where I'm playing along with the wind players. The main function [of the keyboards] in the Ensemble is to lay down a very steady bass line, which Michael Riesman plays. That left hand becomes the conductor of the orchestra; that keeps us together. That's what we hear in our monitors. That's an important element. It's always there in one way or another in the Ensemble. But in solo playing I don't have that requirement, so I don't do it. I'm about to do some new piano pieces for the dancer/choreographer David Gordon. I can't really tell you very much about what's going to happen with it yet, because I haven't done it. But there's some other piano writing you can hear in the *Liquid Days*, which is not arpeggiated writing so much; it's more polymetric writing.

Q: Much of the pattern repetition in your older keyboard writing seems to anticipate the development of arpeggiators and sequencers. Have you ever considered using devices of this sort in lieu of playing such parts by hand?

PG: Interesting, huh? But I've never really considered doing that. Of course, I'll use sequencers sometimes for programming percussion. It can be useful in the studio but as a live technique, it isn't. Generally speaking, my approach to technology is as a performance medium. I'll give you a good example. One of the things I do when I write an opera for an opera company is to provide them with a work tape so that they can do the designs and the staging. One of the problems with new operas is that you can't go out and buy a recording of it, and most designers can't read music, so we make a work tape--a synthesizer tape with voices. I usually have Michael Riesman play it. At one point we programmed the whole score of Act I of *Akhnaten*, into a Roland MicroComposer, then did Act II with Michael playing all the parts. And Michael was twice as quick; it took half the time. I'll tell you another thing: **Michael Riesman doesn't break down, but the machines always do. I find the machines much more fallible than the players.** That data-loading business is very interesting, but I'm not convinced it's productive.

Q: You've never considered using something like the MicroComposer as a compositional tool?

PG: No, just because I think quicker with pencil and paper. I know composers who work on multi-track machines, but I can conceptualize faster by writing it down. It's a question of speed and clarity and training and what you're used to. I'm used to hearing things in my head that way. Not that we don't make corrections--who doesn't?--but what I write down pretty well stands. I mean, you should see my studio at home. What I have is a Baldwin piano and a cassette player, although I'm about to get my first CD player. And that's it! All our other stuff is downtown in our studio.

Q: Were you ever intimidated by new music technology?

PG: Absolutely not. I always thought the technology was there for me to use. In that way, maybe I'm mentally younger than others of my generation.

Q: But aren't there styles of writing that these machines could open up for you that aren't otherwise available?

PG: I don't know if that's true. That may very well be. It may be that I've missed opportunities because I haven't gone into that as well as I might. But there's a limit to what you can do. Maybe my life is full of missed opportunities. Maybe I've only realized a few of the things that I could have. But in terms of that particular thing, **if you actually look closely at my music, you'll see that it doesn't actually repeat that much.** The kind of programs it would be necessary to write to produce that music would be so complicated that it's actually easier to play. Now, sometimes in a recording studio, some things can be sequenced, though they're usually fairly simple parts, like percussion things. But **if my music were really repeated as much as some people think, it would be unlistenable.**

Q: You do create an illusion of repetition, though.

PG: And to do that, you have to change all the time.

Q: **Do you compose at the piano or away from it?**

PG: I do both. I need the piano for real-time playing. I have a lot of trouble conceptualizing music in real time; it always comes out about 30 per cent faster [*laughs*]. So the only way to hear a piece unfold in real time for me is to play it. Also, I go through periods where I like to work a lot with the piano. For some of my orchestral pieces I do that. But for something like an opera, you really can't play all the parts, unless it's something really simple. So even when you're playing it at the piano, you're only playing part of the piece.

Q: What exactly do your keyboard scores look like? Do you often have repetition indications over certain bars, for example?

PG: Sometimes, but I tend not to. My repeats rarely get above three, so most of my stuff can be written out in standard notation. I used to use what I called multipliers, which were brackets with numbers, but I've found that it's not a wise idea to have a multiplier outside of my Ensemble. Most people are just confused by it, so we just write it out.... No, that's not quite true. In some of the polymetric things, it's easier to write things out by having a group in the left hand repeating four times, and in the right hand repeating three times, then having the overall thing repeat maybe four times. So in polymetric music, I will use the shorthand.

Q: Given the illusion of repetition you often create, a player could easily get lost when reading this sort of passagework.

PG: That certainly can happen. **One of the Ensemble problems is to stay together.** I've been playing with some of these people for 18 to 20 years, so we've been able to get beyond many of the problems of simply falling apart. We occasionally have what we call train wrecks. Not very often, but it happens. But when you play together for as long as this Ensemble has, you achieve a level of performance that you simply cannot achieve with other players.

Q: Are you still playing solo recitals?

PG: There are two or three piano pieces I play in a recital situation, but I don't do a lot of solo playing any more. There was a time when I had a three-part career, which was the Philip Glass Ensemble, operas, and solo playing. I eventually gave up the solo playing because it required too much practicing. **The thing is, if you don't practice all the time, a good performance is only a question of luck.** It's simply to harrowing an experience to go into a recital wondering whether you're going to be lucky that night. Who the hell wants to do that? On the other hand, I didn't really have the two or three hours a day that really consistent good playing requires. So I gave it up. But I kept in my repertory two or three pieces, which I use for benefit concerts, some solo appearances, and things of that kind.

Q: Which pieces are those?

PG: One is *Mad Rush* There's an arrangement of "Knee 4" from *Einstein on the Beach* that I do as a solo piano piece. Also, I play the "Cadenza" and "The Bed Music" from *Einstein* as a solo piano piece. That, plus "The Opening" from *Glassworks*, are pieces I still can sit down and play, and I tend to do that half a dozen times a year.

Q: What about your parts in Ensemble performances? As a player, **are you challenged by the keyboard parts you write for yourself?**

PG: Well, it's funny. When Martin Goldray came in as our third keyboard player three or four years ago, it was actually to pick up my parts. **We needed someone who could play them better than I. It was the whole problem about practicing**, because I don't practice as much as Michael would want me to. The second parts are Martin's. Then I've written a whole series of other parts for myself, and **mine are the easiest, because I have to spend my time writing.**

Q: Do you have a pianist in mind for the solo pieces you're working on now?

PG: In a sense I'm writing them for myself, but Michael Riesman will probably do the recording. We're going to start off by doing a recording for David Gordon, then he can do the choreography. I had actually wanted to have a live pianist, but David prefers to work with tape. For dancers tape is more dependable. It's also less expensive. Well, that's the way that goes. But I'm sure I'll also hold onto a few of those pieces for myself to play from time to time.

Q: Does your style of writing stem to a certain degree from your capabilities on the keyboard?

PG: In a sense it did. That developed before I knew Michael. It really stems from the fact that I began working with electronic instruments. I began with a multiple keyboard ensemble very simply because most of my friends were keyboard players, and the original members of my group were essentially my friends. The reason we did electric keyboards was, where are you going to find three pianos together? You don', so you put together electric organs. My first ones were Farfisas. It seemed at that time, in the late '60s, that every basement in Queens had a Farfisa tucked away under the stairwell. I don't know why that was. But you could pick up a Farfisa Mini-Compact for $150. And besides being cheap, the Farfisa was a very dependable keyboard, and very portable. I didn't get involved with synthesizers until they became polyphonic. I did not use the Mini-moog because I really needed a two-handed instrument.

Q: You didn't consider getting two of them?

PG: Too expensive. Also, the difficulty with those monophonic keyboards was that if your technique wasn't absolutely sure, you could bleep out notes. You have to release before you attack, and if you attack too soon, the playing becomes very irregular. So the monophonic ones were not good. The one we were able to use was an ARP Explorer, which we used for bass lines, but Michael was the only person who could play it at our tempos with the sureness of technique that allowed it to sound steady. If anyone else tried it, it sounded rather ragged.

Q: Your first polyphonic synth was a Prophet-5.

PG: That's right. I got that in 1978.

Q: Interestingly, some of the most characteristic Prophet timbres are not dissimilar from the Farfisa sound.

PG: As a matter of fact, at about that point my Farfisas were all crapping out. They weren't really built to last. By '75 we were literally Band-Aiding them together. So the first thing we did when we got the Prophet was we made a program that sounded like the Farfisa; it's still there, in Bank 1, No. 8. Then, when we got the DXs, we did the same thing. We have Farfisa programs for all our synthesizers, since it's part of our sound. But what amused me at the time was that as my original instruments were becoming antiques, I got a $3,000 instrument to do what a $150 keyboard had done [*laughs*]. This is a kind of progress, in a way. Even now, the Farfisa program is always in our music. I don't know, maybe it's just sentiment.

Q: What led you to include the DX7s that your Ensemble uses now?

PG: One of the problems everyone has been having, including us, is getting a good string sound. In the process of transcribing the operas and theatre works for the Ensemble, we've begun including string and brass and percussion sounds; this is one way we've evolved since the old Farfisa days. So the main thing was to get these keyboard sounds, but also the DX7 really did replace the Prophet for us. According to Michael, who does all the programming for the Ensemble, it's a little difficult to program, but it does seem to be more flexible. I also like the cartridge system. Of course you can load things into the Prophet, but the DX's cartridge is very easy.

Q; When the group travels, do you carry your own DXs with you, or do you must take the cartridges and rent instruments where you go?

PG: Oh, no, we carry everything. I can't depend on local sources. We have over two tons of stuff. It's not only the keyboards. We take our front-0f-the-house P.A., our monitor P.A..... It's a big deal. We also carry MIDI-ed rack-mounted TX units. We've been approaching live MIDI playing rather cautiously.

Q: What about your Emulators?

PG: They're very useful for other reasons. I use the Emulator principally as a live performance instrument with the voice in some works. For example, *The Photographer* is actually a choral piece with my Ensemble, so we use a voice sample. Dora Ohrenstein, our singer, plays it with one hand and sings along with it. With her one voice and everything else, we can very effectively simulate the feeling of a complete choral track.

Q: Have you sampled a lot of voices for the Emulator?

PG: A lot of voices, and certainly hers. So that's our principal live use of the Emulator, but we have lots of other samples too. We use brass samples and organ samples, for example, in recording too.

Q: Why did you add the Emulator II after working with the Emulator I for awhile?

PG: I think the main reason was that the keyboard split on the II was better for us. We don't just buy the latest model because it's the latest model, but generally speaking, the latest models are improvements. We've become very popular with some of the instrument manufacturers; they like to talk to the people who are using their stuff, right? When Michael was out in California, he spent an afternoon at E-mu, talking about samples and the things we needed.

Q: In your dialogues with manufacturers, what technological changes are you looking for now?

PG: We're mainly trying to simplify and consolidate. Right now my three keyboard players and I each play from two or three manuals; we could eventually get down to one or two. So we want to simplify, while getting still more flexible. It's always a process. We're much further along with it than ten years ago, but I still think we're at the beginning.

Q: In what sense is Michael the ideal keyboard player for your work, if indeed he is?

PG: Well, actually, he would be the ideal keyboard player for the ensemble, but I would hesitate to say that there is an ideal player for the keyboard music in that I don't want to deny the possibility that someone else may come along and be able to play the music better than Michael and I. On the other hand, I've never found a keyboard player who can equal Michael for my music. At the moment, he *is* the ideal. On one occasion, Michael couldn't make a concert, and martin had to fill in on his parts. Now, Martin is an extremely accomplished player, and he was able to do it, but he said that he was in a sweat through the whole performance. It's very demanding music.

Q: Then, if we may speak of a hypothetical ideal player for your keyboard repertoire, what kind of player would he or she be?

PG: Well, what you need is very steady playing in terms of tempi. You need real independence of right and left hand. I'm interested in the columns you run in *Keyboard Magazine* on that kind of thing. That is axiomatic in my music; you have to be able to play twos against threes, sometimes fours against fives, in my music, and that's not so easy to do. *Einstein* is full of that. And, you know, synthesizer playing really is different from piano playing. If you haven't developed that technique, you play much too hard on the synthesizer, as I'm sure your readers know. Someone who is just a piano player will have great difficulty playing this music on the synthesizer. Michael has both techniques. He has probably the finest synthesizer technique I've ever seen. I've had people walk into the studio when we were playing, whether it be Paul Simon or Ray Manzarek, and when they see Michael play, all they can say is, "Wow." Martin Goldray is a pianist trained in the classical tradition who is acquiring a synthesizer technique, which takes literally years of practice. He tells me that he feels it's just coming; even now, he feels that he plays too hard on the synthesizer. And I definitely write for synthesizer playing. That kind of rapid playing over extended periods of time cannot be accomplished on the acoustic piano. If you tried it, you'd be in shreds.

Q: Some listeners at Ensemble concerts are surprised at the loudness of the performance, especially since dynamic nuance is one of the key devices in your works.

PG: Well, one of the things you give up with amplified music is exactly that. I don't know whether there's much you can do about that. It's a tradeoff; almost everything in life is. You gain in complexity of sound and timbre what you lose in terms of nuance and shadings. However, about half the music I write is acoustic. At the moment, I have six operas around the world, and in any year three or four of them are done in different places, often within the context of very traditional presentation. The Philadelphia Orchestra with Dennis Russell Davies did two **evenings of Wagner and Glass**, and there you have people who are trained in the kind of

dynamic and nuance playing you were referring to. It's very pleasing to me to hear what happens to music when it's done that way.

Q: Wagner and Glass?? That's an odd combination.

PG: Yeah. One program was Act II of *Tristan und Isolde*, and Act II of *Akhnaten*. Nice, huh?

Q: I can imagine Wagnerians in the audience listening for leitmotifs in *your* work.

PG: And it wouldn't be too hard to find them.

Q: Have you reflected much on your historical position, especially given the percentage of your work that was written specifically for your Ensemble?

PG: Not very much, although I'm very interested in phenomena like the Ellington orchestra. What happens to an ensemble that's built around one person? I haven't made arrangements for the ensemble music to be performed outside of the Ensemble, but the operas can be done by anybody. The opera scores are copied out by professional copyists, the parts are clean and in good condition. Any company can rent them. The music is warehoused by Theodore Presser Co., which acts as the agent. I've been very careful about that. And there's a consistent program of recording that goes on. But it's not just a question of documenting. It's a question of setting a standard for the music, so someone should want to play, say, *Music In 12 Parts.*

Q: No matter how posterity receives your music, it seems clear that practically no one else in our time has established such credibility in the art and pop music worlds, and demonstrated so successfully that one can user the energies of both traditions to create viable music as you have.

PG: It's so much fun to do that. And one of the reasons I do that is I don't see why I shouldn't. Years ago I found out there were a lot of things I wasn't supposed to do, and I discarded that concept. That started the very first time I played in a little night spot called Max's Kansas City, back in 1972. I knew the guy who ran the place, Mickey Ruskin, and he said, "Look, why don't you play here? You can have the door." We made about $300 that night, and after that I said, "Gee, I'll play wherever anyone asks me." In L.A. I sometimes alternate between playing at the Roxy and at Dorothy Chandler pavilion. It seems that we only have one chance to do this, so I'm interested in looking into it all. I'll tell you another thing. The people that I work with, like David Byrne or the Roches, these are very bright, talented people. It's crazy to deny yourself the opportunity to work with them for some imagined idea of propriety.

Q: Several years ago, in talking about writing for voices, you told an interviewer, "I don't take plays and set them to music. Meaning is conveyed in language. That's not very important to me. I use language very much in terms of the sound. I like the idea that none of us can understand it." Yet, on *Songs for Liquid Days*, you did precisely "take plays and set them to music."

PG: It just goes to show you can't trust Phil Glass {*laughs*]. But, no, that's a very good point. My attitude toward language is that it's a process rather than a conclusion. In fact, the songs were specifically about using language in quite a different way than I had talked about at that time.

Q: They were words, but they perhaps didn't tell a story in a traditional linear way.

PG: Perhaps not, but in many ways the setting is somewhat traditional. The music is meant to fit the meaning of the words. In the first song, for example, the song about the hum ["Changing Opinion"], the hum becomes the sound. And at one point, when the words talk about "sometimes it was a pulse," you hear it obviously in the music. So the words and the music do play off each other very specifically, in a way that they don't in *Satyagraha.* This seems to be a very different way of working.

Q: Given that you wrote from completed lyrics on *Liquid Days*, was the process of composing music different than it might have been when doing a libretto based on solfege or numbers, as in *Einstein On the Beach*?

PG: It was. First of all, in the case of *Einstein*, the primary subject matter was conveyed to me in drawings; there was some text as well, but mainly the drawings that [director/set designer] Bob Wilson made. So I wasn't starting totally from scratch in a certain way. In other words, if I was doing the scene called "The Trial," I had dozens of sketches of the scene before me when I wrote the music. In writing the *Songs,* the words took the place of the drawings. In other words, the music related to a specific subject, which was the words, so that I began with the words, and, literally, the words inspired the music. I don't know how else to say it. It's just the way that a painter will look at a table and draw the table.

Q: Not all the lyrics are linear in the sense of boy-meets-girl, or boy-proceeds-from-point-A-to-point-B, though.

PG: And yet the point of contact can be quite direct.

Q: The connection between lyric and music must have been more obtuse in some of the songs than in others.

PG: That's true. For example, the last song, Laurie Anderson's ["Forgetting"]. I had that series of words to set. They came in groups of three, but I set them in rhythmic groupings of four. That meant that every line of three had a space in it; it would be one, rest, two, three, or rest, one, two, three, or one, two, three rest, and so forth. I remember looking at the words and seeing that she had so consistently used that group of three that I could fit the three into the four and form a kind of rhythmic tension between the words and the phrasing. That's how I began writing that song; I set the actual words at the end. Then I took the second group—"They rushed slightly by, these lovers"—and I used that same music again. That left me the first group and the third group to set up. That became the narrative part of the song.

Q: You also seemed to depart from this specific written list of words at the end. The piece seemed longer than the written libretto.

PG: Oh, yes, that's right. You see, it says, "So she repeats these words over and over again." I spoke to Laurie and said, "Since you say 'over and over again,' why don't we do it over and over again?" She said, "Yeah, that's okay." So I extended these four lines to maybe 12 lines.

Q: Which of these songs was the most difficult for you?

PG: They weren't particularly difficult, really. It's funny. I have this way of hardly ever remembering the hard parts. I think in a away, this one we're talking about, "Liquid Days," was it. And David Byrne's "Open The Kingdom." The difficulty was that it took me a devil of a time to figure out what they meant. They were given to me as a pair. David is very helpful and very easy to work with in one way, yet he often will not tell you the most important thing that you need to know. He just doesn't talk a lot. I looked at these two songs for awhile, and I finally saw that they were both love songs. One was about domestic love and one was about religious love. That was very interesting. Once I saw that I had the key to it, I realized that it was exactly like certain traditions of music. The vocal music of South India is like that: Songs that are either to your lover or to your god, always one or the other. And I saw that that was what these were, so I just decided to put them together. They form a range of human love, in a way, don't they?

Q: The music on the words "open the kingdom" stood out dramatically, as if to evoke religious choral singing.

PG: Absolutely, yeah. Well, I saw it that way. And you take words like "days of fishes," "uncertain," "I'm asking," "open the kingdom" [all from "Open The Kingdom"].... These are all religious images. Whereas the other one, "Love wiggles on the floor," and "Love could use a shave," that's something that happens at home. Love becomes this kind of a comfortable person that you've been hanging around with. It makes it nice that the girls [the Roches] are singing it.

Q: You've written long works in the past, though you've written smaller pieces too. In what sense was this project different from working in large ensembles and blocks of time?

PG: Well, as you say, I've done quite a lot of smaller pieces. They're not as well known as the big pieces, which I think have become famous for their size. You know, I'm the guy that

did the five-hour opera, or the six-hour concert, and so forth. But in fact there are quite a few short pieces too. So that wasn't really a factor. However, it was a disappointment to some people that the songs were rather over-long in terms of what one might have heard on the radio. That first song is about eleven minutes long.

Q: That's an interesting comment. It seems to us that the length of "Changing Opinion" is just about right for what it is.

PG: Seems right to me. Who would make a comment like that? It's not even exactly true. "Hey, Jude" was about eight or nine minutes. There have been long songs, and "Hey, Jude" was one of the most popular songs that was ever written.

Q: Jimmy Webb's "MacArthur Park" ran over seven minutes.

PG: Yeah, and the people who wrote those things were masters of popular music. I can hardly be called that. I'm someone who's stumbled into the song form. I wasn't thinking that having written all these three-minute singles I could afford to write an eight-minute song. It wasn't like that at all. The length, to me, was determined by the words and by the musical needs. I wasn't thinking of the packaging aspect of it, which is like how are you going to get it on the radio? There is one three-minute song on there, but that's by accident. On the other hand, I knew I was working in the LP format; that was in my mind too.

Q: Although *Songs* represents a different format than the one we're used to seeing from you, it's still clearly written by you.

PG: Yeah, the authorship is clear.

Q: So in what sense does the fact that these are songs change the essence of your music?

PG: Well, certainly, being geared to the words, the structure changes more rapidly than on some of the other stuff, except for the first song, which has rather long passages. I don't think there's one A-B-A song in the whole thing, but they are formed from smaller units that are put together.

Philip Glass: A Selected Discography

As Composer and Performer:

Einstein On the Beach, CBS M4K-38875 (CD)
Glassworks, CBS MK-37265 (CD)
The Photographer, CBS MK-37849 (CD)
Songs from Liquid Days, CBS MK-39564 (CD)

As Composer Only:

"Facades," Contemporary Flute Music, Ransom Wilson Flute Ensemble, Angel D-J7340 (LP)
"Modern Love Waltz," Da Capo Chamber Players, Composers (170 W. 74th Street, New York, NY 10023), 441.
"Olympia: Lighting Of The Torch," Official Music of the XXIIIrd Olympiad, Columbia, JS-39322
Satyagraha, CBS Masterworks, 13T-39672 (CD)